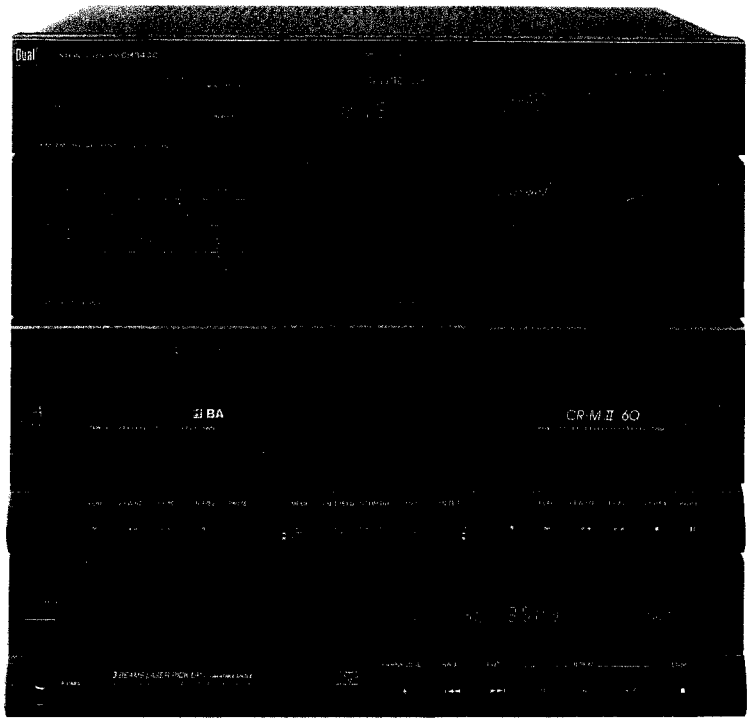
Service-Anleitung
Service Manual
Instructions de Service

# CH/CS/CL 3400 A



| Technische Daten (typische Werte) | Technical data (typical value) | Caractéristiques techniques (valeur caractéristique) | Amplifier |
|---|---|---|---|
| **Ausgangsleistung (DIN/8 Ω)**<br>Musikleistung<br>Sinus-Dauertonleistung | **Rated output (DIN/8 Ω)**<br>music power<br>Rms continuous power output | **Puissance de sortie (DIN/8 Ω)**<br>Puissance musicale<br>Puissance efficace | <br>2×50 Watt<br>2×35 Watt |
| **Klirrfaktor**<br>Nennleistung – 6 dB, 1000 Hz | **Harmonic distortion**<br>nominal output – 6 dB, 1000 Hz | **Facteur de distorsion**<br>Puissance nominale – 6 dB, 1000 Hz | <br>< 0,1 % |
| **Leistungsbandbreite** – 3 dB | **Power band width** – 3 dB | **Réponse en puissance** – 3 dB | 20 Hz – 25 kHz |
| **Übertragungsbereich**<br>Tuner, Tape, CD/AUX, Phono nach RIAA | **Frequency response**<br>Tuner, Tape, CD/AUX, Phono nach RIAA | **Bande passante**<br>Tuner, Tape, CD/AUX, Phono nach RIAA | <br>20 Hz – 20 kHz ± 2 dB<br>20 Hz – 20 kHz ± 2 dB |
| **Eingänge**<br>AUX/VIDEO<br>Phono (Chinch) | **Inputs**<br>AUX/VIDEO<br>Phono (Cinch) | **Entrées**<br>AUX/VIDEO<br>Phono (Cinch) | <br>160 mV, 47 kOhm<br>2,5 mV, 47 kOhm |
| **Ausgänge**<br>Druckklemmen für Hauptlautsprecher<br>Druckklemmen für Surround-Lautsprecher<br>1 Koaxialbuchse 1/4 inch für Kopfhörer<br>1 Ausgang für CD Überspielung | **Outputs**<br>press-type terminals strips for Main-speakers<br>press-type terminals strips for Surround-speakers<br>1 coaxial jack 1/4 inch for headphone<br>1 CD-output | **Sorties**<br>Prises hauts-parleurs (principale)<br>Prises hauts-parleurs (arrière)<br>1 prise coaxiale de 1/4 inch pour le raccordement du casque<br>1 sortie pour CD | <br>8 Ohm<br>16 Ohm<br>8–600 Ohm |
| **Fremdspannungsabstand**<br>über Fremdspannungsfilter<br>bezogen auf Nennleistung<br><br>Tuner, Tape, CD/AUX, Phono | **Unweighted signal-to-noise ratio**<br>Via external voltage filter (DIN 45 405)<br>related to Nominal output<br><br>Tuner, Tape, CD/AUX, Phono | **Rapport signal/bruit non-pondéré**<br>Après le filtre de tension non pondéré (DIN 45 405)<br>ramené à la puissance nominale<br>Tuner, Tape, CD/AUX, Phono | <br><br><br>82 dB<br>63 dB |
| **Geräuschspannungsabstand bewertet mit A-Filter (RMS) bezogen auf Nennleistung**<br>Tuner, Tape, CD/AUX, Phono | **Signal-to-noise ratio, weighted with IHF weighted with A-filter (RMS) in relation to rated power**<br>Tuner, Tape, CD/AUX, Phono | **Rapport signal/bruit pondéré avec filtre A (RMS), ramené à la puissance nominales**<br>Tuner, Tape, CD/AUX, Phono | <br>87 dB<br>68 dB |
| **Übersprechdämpfung** bei 1000 Hz<br>zwischen den Kanälen<br>zwischen den Eingängen | **Cross-talk attenuation** at 1,000 Hz<br>between the channels<br>between the inputs | **Affaiblissement de diaphonie** pour 1000 Hz<br>entre les canaux<br>entre les entrées | <br>50 dB<br>65 dB |
| **Leistungsaufnahme (max.)** | **Power consumption (maximum)** | **Puissance absorbée (maximale)** | 200 Watt |
| **Netzspannungen** | **Line voltages** | **Tensions du réseau** | 220 V/50 Hz |

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| Technische Daten (typische Werte) | Technical data (typical value) | Caractéristiques techniques (valeur caractéristique) | Cassette |
|---|---|---|---|
| **Bandgeschwindigkeit** | **Tape speed** | **Vitesse de bande** | **4,75 cm/s (1 7/8 ips) 9,5 cm/s bei Überspielung** |
| **Kurzzeitige Geschwindigkeits-schwankungen** (Tonhöhenschwankungen) W.R.M.S. | **Wow and flutter** Weighted RMS | **Fluctuations instantanées de la vitesse** (variations de la hauteur du son) W.R.M.S. | ± 0,2 % |
| **Übertragungsbereich** (bezogen auf DIN-Toleranzfeld) Fe-Band $CrO_2$-Band Reineisen-Band | **Frequency response** (ref. to DIN tolerances) Standard Fe tape $CrO_2$ tape Pure metal tape | **Bande passante** (ramenée à la plage de tolérance DIN) Bande Fe Bande $CrO_2$ Bande fer pur | 30 – 12 000 Hz 30 – 14 000 Hz 30 – 14 000 Hz |
| **Ruhegeräuschspannungsabstand** mit Dolby NR Fe-Band $CrO_2$-Band Reineisen-Band | **Signal-to-noise ratio** with Dolby NR Standard Fe tape $CrO_2$ tape Pure metal tape | **Rapport signal/bruit** avec Dolby NR Bande Fe Bande $CrO_2$ Bande fer pur | **Dolby NR** 60 dB 63 dB 63 dB |
| **Übersprechdämpfung** (bei 1000 Hz) zwischen zusammengehörigen Kanälen zwischen Kanälen in Gegenrichtung | **Channel separation** (at 1000 Hz) between stereo channels in opposite direction | **Diaphonie** (à 1000 Hz) en sens stéréo en sens inverse | 40 dB 60 dB |
| **Löschdämpfung** bei 1000 Hz | **Erasure** at 1000 Hz | **Atténuation d'effacement** à 1000 Hz | 65 dB |
| **Umspulzeit** für C 60 Cassette | **Fast winding time** for C 60 cassettes | **Temps de rebobinage** pour cassette C 60 | 150 sec. |

| Technische Daten (typische Werte) | Technical data (typical value) | Caractéristiques techniques (valeur caractéristique) | Tuner |
|---|---|---|---|
| **Empfangsbereiche** FM (UKW) MW LW | **Wave bands** FM (VHF) MW LW | **Gammes d'ondes** FM (O.U.C.) P.O. G.O. | 87,5 – 108 MHz 522 – 1620 kHz 146 – 290 kHz |
| **Empfindlichkeit** FM-Mono (75 Ohm, 26 dB Rauschabstand) FM-Stereo (75 Ohm, 46 dB Rauschabstand) | **Sensitivity** FM-Mono (75 Ohm, signal-to-noise ratio 26 dB) FM-Stereo (75 Ohm, signal-to-noise ratio 46 dB) | **Sensibilité** FM-mono (75 ohms, rapport signal/bruit de 26 dB) FM-stéréo (75 ohms, rapport signal/bruit de 46 dB) | 1,3 $\mu$V 32 $\mu$V |
| **Geräuschspannungsabstand** | **Signal-to-noise ratio** | **Rapport signal/bruit** | 65 dB |
| **Klirrfaktor** | **Harmonic distortion** | **Taux de distorsion** | < 0,7 % |
| **Übersprechdämpfung** bei 1 kHz | **Channel separation** at 1,000 Hz | **Diaphonie stéréo** (à 1 kHz) | 40 dB |
| **NF-Frequenzgang** für Preemphasis 50 $\mu$s – 3 dB | **AF frequency response** for 50 $\mu$s pre-emphasis – 3 dB | **Bande passante BF** pour pré-emphasis 50 $\mu$s à 3 dB | 25 Hz – 12 kHz |
| **Trennschärfe (stat./dyn.)** | **Selectivity (stat./dyn.)** | **Séléctivité (stat./dyn.)** | 70/62 dB |

| Technische Daten Meßwerte = typische Werte | Technical data Measured values = typical values | Caractéristiques techniques Valeurs mesurées = valeurs typiques | CD-Player |
|---|---|---|---|
| **Frequenzbereich** | **Frequency response** | **Courbe de réponse** | 20–20 000 Hz |
| **Geräuschspannungsabstand** | **Signal to noise ratio** | **Rapport signal/bruit** | 94 dB |
| **Dynamikbereich** | **Dynamic range** | **Dynamique** | 90 dB |
| **Übersprechdämpfung (1 kHz)** | **Crosstalk (1 kHz)** | **Diaphonie (1 kHz)** | 80 dB |
| **Klirrfaktor (1 kHz)** | **Harmonic distortion (1 kHz)** | **Distorsion harmonique (1 kHz)** | < 0,08 % |
| **Gleichlaufschwankungen** | **Wow and flutter** | **Fluctuations** | ± 0,001 % |
| **Ausgangsspannung** | **Output voltage** | **Tension de sortie** | 1 V |
| **D/A Wandler** | **D/A Converter** | **D/A Convertisseur** | 16 Bit linear (Sigma) |
| **Abtastfrequenz** | **Sampling frequency** | **Fréquence de pick-up** | 88,2 kHz |
| **Abtastsystem** | **Pick up** | **Pick-up** | 3-Strahl-Laser 3-beam optical pick up |

## Abgleichanleitung Tuner

| Signalquelle | Einstellung Gerät | Einstellung Signalquelle | Meßgerät Anschluß | Abgleichposition | Abgleich-bemerkungen |
|---|---|---|---|---|---|
| **FM-Oszillator** | | | | | |
| | 87,50 MHz | | DC-Voltmeter an: VT | Kontrolle | 1,5 V DC |
| | 108,00 MHz | | | | 8,0 V DC |
| **FM-ZF, Vorkreis** | | | | | |
| FM-Meßsender an 75 Ohm Antenneneingang | Senderfreie Frequenz ca. 98 MHz | 0–1 mV, Hub ± 40 KHz Mod. 1 KHz ca. 98 MHz auf Deckung | NF-Voltmeter, Oszilloskop über Lastwiderstände an L/R Lautsprecherausgang | T 1, T 107 | Maximum |
| | 90 MHz | ca. 90 MHz auf Deckung | | Luftspulen | |
| | 105 MHz | ca. 105 MHz auf Deckung | | Vorkreis Kontrolle | |
| **FM–ZF, (Feinabgleich)** | | | | | |
| Antenne an 75 Ohm Antenneneingang | Starke FM Sender auf seiner Sollfrequenz empfangen | | DC-Voltmeter über R 129 | T 107 | 0 V ± 5 mV DC |
| **Decoderabgleich** | | | | | |
| FM-Meßsender an 75 Ohm Antenneneingang | Senderfreie Frequenz ca. 98 MHz | ca. 98 MHz auf Deckung 1–2 mV, Pilot aus | Frequenzzähler an IC 102 Pin 9 | VR 101 | 19 KHz ± 100 Hz |
| | | Pilot ein, Hub ± 40 KHz Mod. 1 KHz, Abwechs. L oder R Kanal | NF-Voltmeter, Oszilloskop über Lastwiderstände an L/R Lautsprecherausgang | VR 102 VR 105 LPF 101 | auf größte Kanaltrennung |
| **Unterdrückung Pilottonreste 19 KHz** | | | | | |
| FM-Meßsender an 75 Ohm Antenneneingang | Senderfreie Frequenz ca. 98 MHz | ca. 98 MHz auf Deckung 1–2 mV, 19 KHz Pilot ein | NF-Voltmeter, Oszilloskop über Lastwiderstände an L/R Lautsprecherausgang | LPF 102 (LK) | Minimum |
| | | | | LPF 103 (RK) | |
| **FM-Sendersuchlaufschwelle (Stopsignal)** | | | | | |
| FM-Meßsender an 75 Ohm Antenneneingang | Senderfreie Frequenz ca. 98 MHz | ca. 98 MHz auf Deckung, 20 µV Hub ± 40 KHz, Mod. 1 KHz | DC-Voltmeter an Q 115 (Collector) | VR 103 | Spannungssprung „L" → „H" |
| **AM Oszillator** | | | | | |
| | LW – 146 KHz | | DC-Voltmeter an R 120 | T 105 | 1,0 VDC |
| | LW – 290 KHz | | | TC 104 | 4,1 VDC |
| | MW – 522 KHz | | | T 104 | 1,2 VDC |
| | MW – 1620 KHz | | | TC 103 | 7,9 VDC |
| **AM – ZF, Vorkreis** | | | | | |
| AM-Meßsender an AM-Antenneneingang | MW – 999 KHz | 10 µV–1 mV, 1 KHz Mod. 30 % 999 KHz | NF-Voltmeter, Oszilloskop über Lastwiderstände an L/R Lautsprecherausgang | T 106 | Maximum |
| | LW – 160 KHz | 160 KHz | | T 103 | |
| | LW – 230 KHz | 230 KHz | | TC 102 | |
| | MW – 603 KHz | 603 KHz | | T 102 | |
| | MW – 1404 KHz | 1404 KHz | | TC 101 | |
| **AM-Sendersuchlaufschwelle (Stopsignal)** | | | | | |
| AM-Meßsender an AM-Antenneneingang | MW 999 KHz | 3 mV, 1 KHz, Mod. 30 % 999 KHz | DC-Voltmeter an Q 115 (Collector) | VR 104 | Spannungssprung „L" → „H" |

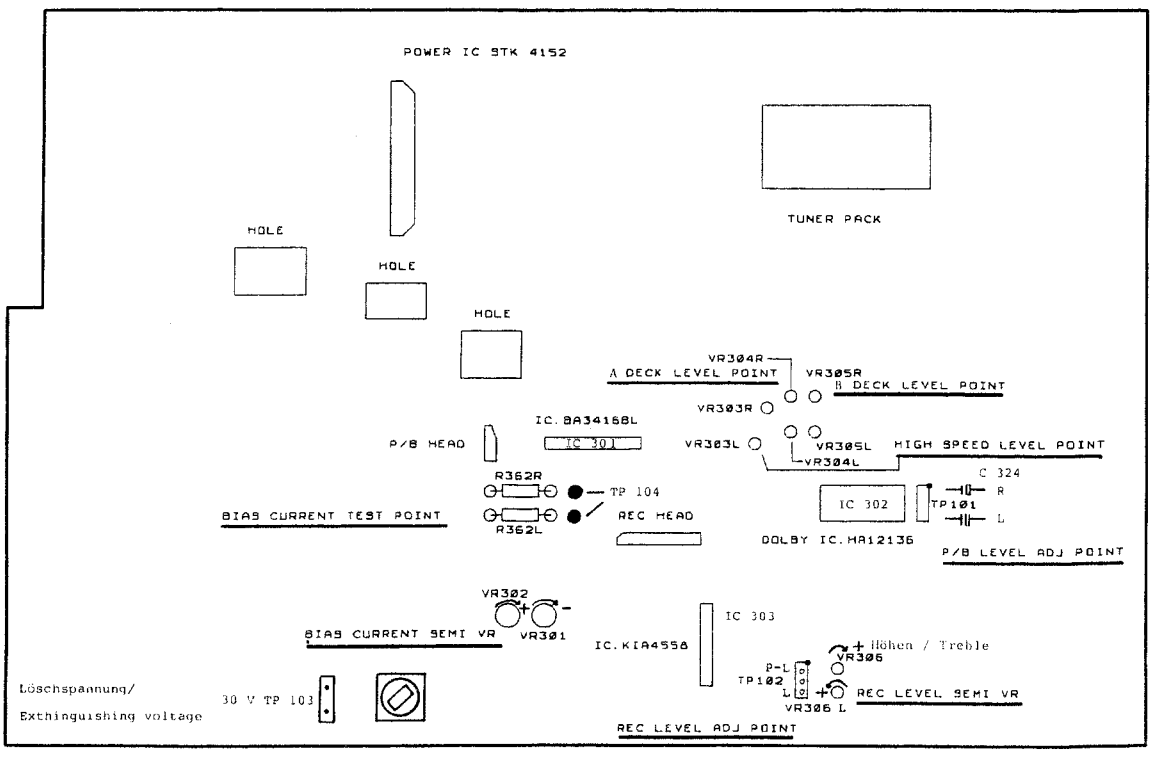
## Tuning instructions for tuner

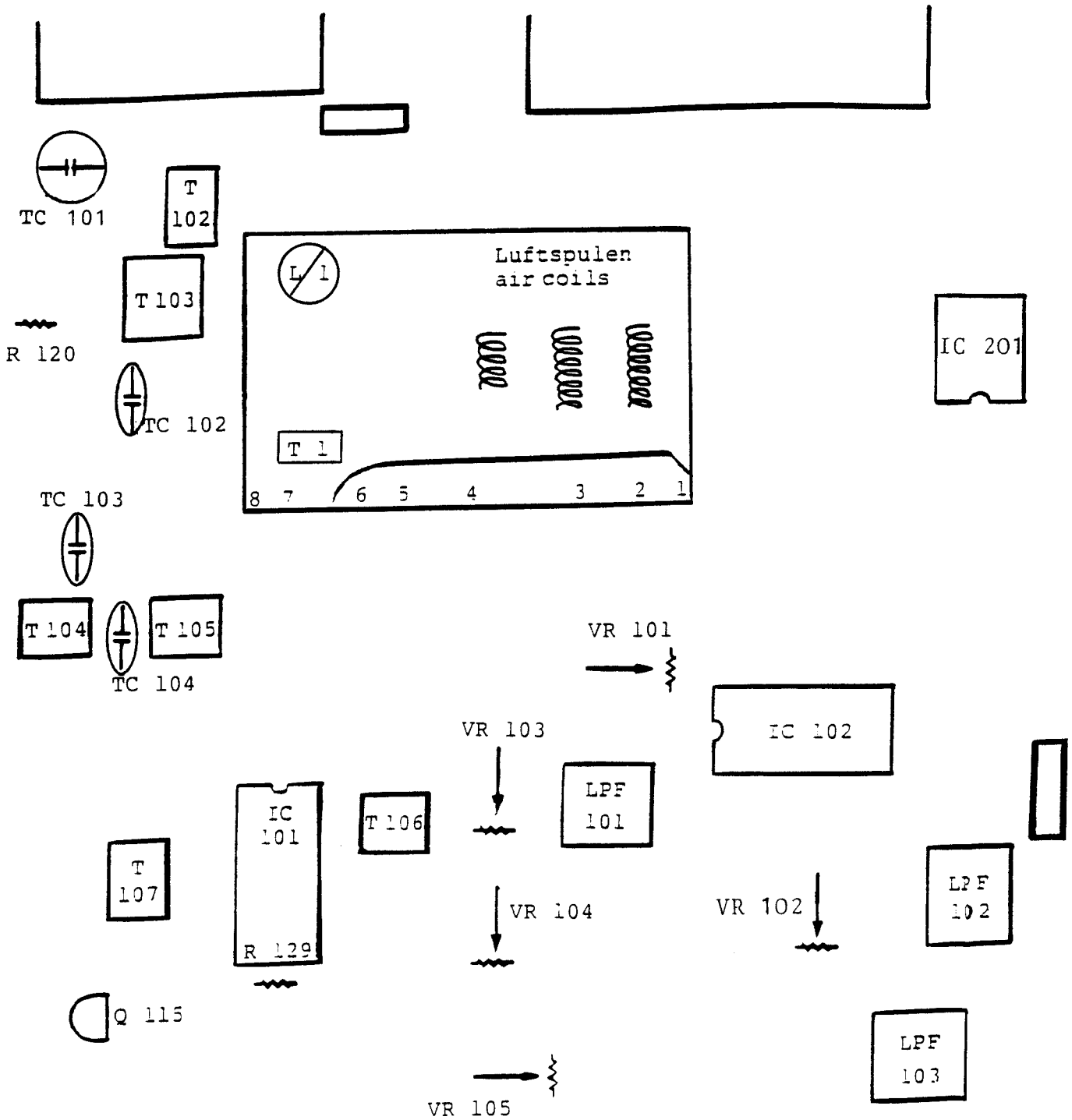
| Signal source | Equipment setting | Signal source setting | Connection of measuring instrument | Item to be tuned | Tuning, Remarks |
|---|---|---|---|---|---|
| **FM oscillator** | | | | | |
| | 87.50 MHz | | DC-Voltmeter to: VT | Check | 1.5 V DC |
| | 108.00 MHz | | | | 8.0 V DC |
| **FM IF, input circuit** | | | | | |
| FM signal generator to 75 Ohm antenna input | Frequency without transmitters approx. 98 MHz | 0–1 mV, Shift ± 40 KHz Mod. 1 kHz, tune to approx. 98 MHz | AF voltmeter, oscilloscope over load impedances to L/R loudspeaker output | T 1, T 107 | Maximum |
| | 90 MHz | Tune to approx. 90 MHz | | air-cored coil | |
| | 105 MHz | Tune to approx. 105 MHz | | Input-circuit control | |
| **FM IF (fine tuning)** | | | | | |
| Antenna to 75 Ohm antenna input | Receive strong FM transmitter at its nominal frequency | | DC voltmeter over R 129 | T 107 | 0 V ± 5 mV DC |
| **Balance of decoder** | | | | | |
| FM Signal generator to 75 Ohm antenna input | Frequency without transmitters approx. 98 MHz | Tune to approx. 98 MHz 1–2 mV, pilot off | Frequency counter to IC 102 Pin 9 | VR 101 | 19 KHz ± 100 Hz |
| | | Shift ± 40 KHz Mod. 1 KHz, pilot ON Left and right channel in change | AF voltmeter, oscilloscope over load impedances to L/R loudspeaker output | VR 102 VR 105 LPF 101 | Maximum Channel separation |
| **Suppression of residual pilot frequencies (19 KHz)** | | | | | |
| FM signal generator to 75 Ohm antenna input | Frequency without transmitters approx. 98 MHz | Tune to approx. 98 MHz 1–2 mV, 19 KHz pilot ON | AF voltmeter, oscilloscope over load impedances to L/R loudspeaker output | LPF 102 (left channel) | Minimum |
| | | | | LPF 103 (right channel) | |
| **FM search threshold (stop signal)** | | | | | |
| FM signal generator to 75 Ohm antenna input | Frequency without transmitters approx. 98 MHz | Tune to approx. 98 MHz, Shift ± 40 kHz, Mod. 1 kHz, 20 µV | DC voltmeter to Q 115 (Collector) | VR 103 | Voltage jump "L" → "H" |
| **AM oscillator** | | | | | |
| | LW – 146 kHz | | DC voltmeter to R 120 | T 105 | 1.0 V DC |
| | LW – 290 kHz | | | TC 104 | 4.1 V DC |
| | MW – 522 kHz | | | T 104 | 1.2 V DC |
| | MW – 1620 kHz | | | TC 103 | 7.9 V DC |
| **AM IF, input circuit** | | | | | |
| AM signal generator AM antenna input | MW – 999 kHz | 10 µV–1 mV, 1 kHz Mod. 30 % 999 kHz | AF voltmeter, oscilloscope over load impedances to L/R loudspeaker output | T 106 | Maximum |
| | LW – 160 kHz | 160 kHz | | T 103 | |
| | LW – 230 kHz | 230 kHz | | TC 102 | |
| | MW – 603 kHz | 603 kHz | | T 102 | |
| | MW – 1404 kHz | 1404 kHz | | TC 101 | |
| **AM search threshold (stop signal)** | | | | | |
| AM signal generator to AM antenna input | MW 999 kHz | 3 mV, 1 kHz, Mod. 30 % 999 kHz | DC voltmeter to Q 115 (Collector) | VR 104 | Voltage jump "L" → "H" |

## Abgleichanleitung Cassettendeck

| Signalquelle | Einstellung Signal | Einstellung Gerät | Anzeigegerät Anschluß | Abgleichposition | Abgleich Bemerkung |
|---|---|---|---|---|---|
| Bei allen Messungen muß der Volumensteller in 0 Position stehen | | | | | |
| **1. Azimut** Deck 1 + 2 | | | | | |
| Meßcassette | 10 KHz | Dolby: off<br>Normal: on | NF Voltmeter<br>an TP 101 L/R<br>oder C 324 L/R | Azimut-Schraube links neben dem Kopf (Loch über der Taste REWIND) | Maximum<br>mit Lack sichern |
| **2. Bandgeschwindigkeit** Deck 1 + 2 Achtung High Speed zuerst einstellen | | | | | |
| Meßcassette | 3150 Hz | Normal: on | Frequenzzähler<br>an TP 101 L/R<br>oder C 324 L/R | Deck 1 VR 306 A<br>Deck 2 VR 306 B | High Speed 6300 Hz<br>Brücke TP 105 |
| | | | | Deck 1 VR 307 A<br>Deck 2 VR 307 B | 3150 Hz |
| **3. Wiedergabepegel** Deck 1 + 2 | | | | | |
| Meßcassette<br>Dolby Pegel | 400 Hz | Normal: on<br>Dolby: off | NF-Voltmeter<br>an TP 101 L/R<br>oder C 324 L/R | Deck 1 VR 304 L/R | 650 mV |
| | | | | Deck 2 VR 305 L/R | |
| **4. Überspielpegel** bei High Speed | | | | | |
| Meßcassette<br>Dolby Pegel | 400 Hz | Normal: on<br>Deck 2 Rec: on | NF Voltmeter<br>an TP 101 L/R<br>oder C 324 L/R | Deck 1 VR 303 L/R | ca. 580 mV |
| **5. Schnellabgleich für Aufnahmepegel und HF Vormagnetiesierung** (Grobabgleich) | | | | | |
| NF-Generator<br>an Input L/R<br>Aux/Video | 400 Hz ca 250 mV<br>= 580 mV an TP 101 | Dolby: off<br>Record: on<br>Tape: Fe I | NF-Voltmeter an<br>TP 104 R<br>TP 104 L<br>TP 102 R<br>TP 102 L | <br>VR 302<br>VR 301<br>VR 306 R<br>VR 306 L | <br>ca. 6,5 mV<br>ca. 6,5 mV<br>ca. 40,0 mV<br>ca. 40,0 mV |
| **6. Aufnahmepegel** Deck 2 | | | | | |
| NF-Generator<br>an Input L/R<br>Aux/Video | 400 Hz ca 250 mV<br>= 580 mV an TP 101 | Dolby: off<br>Record: on<br>Tape: Fe I | NF-Voltmeter<br>an TP 101 L/R<br>oder C 324 L/R | VR 306 L/R | 580 mV<br>bei Play |
| **7. HF-Vormagnetisierung** Deck 2 | | | | | |
| NF-Generator<br>an Input L/R<br>Aux/Video | 10 kHz ca 25 mV<br>= 58 mV an TP 101 | Dolby: off<br>Record: on<br>Tape: Fe I | NF-Voltmeter<br>an TP 101 L/R<br>oder C 324 L/R | VR 301 L<br>VR 302 R | 58 mV<br>bei Play |
| Achtung: Nach Auswechseln der Löschköpfe sind die Abgleichpositionen 5, 6 und 7 zu überprüfen.<br>Nach dem Einstellen der Vormagnetisierung ist nochmals der Aufnahmepegel zu überprüfen.<br>Bei Abweichungen über 1,5 dB sind die Abgleichpositionen 6 + 7 zu wiederholen. | | | | | |

Main board




TC 101
T 102
T 103
R 120
TC 102
L 1
Luftspulen
air coils
T 1
8 7 6 5 4 3 2 1
IC 201
TC 103
T 104
T 105
TC 104
VR 101
VR 103
IC 102
LPF 101
IC 101
T 106
T 107
R 129
VR 104
VR 102
LPF 102
Q 115
LPF 103
VR 105

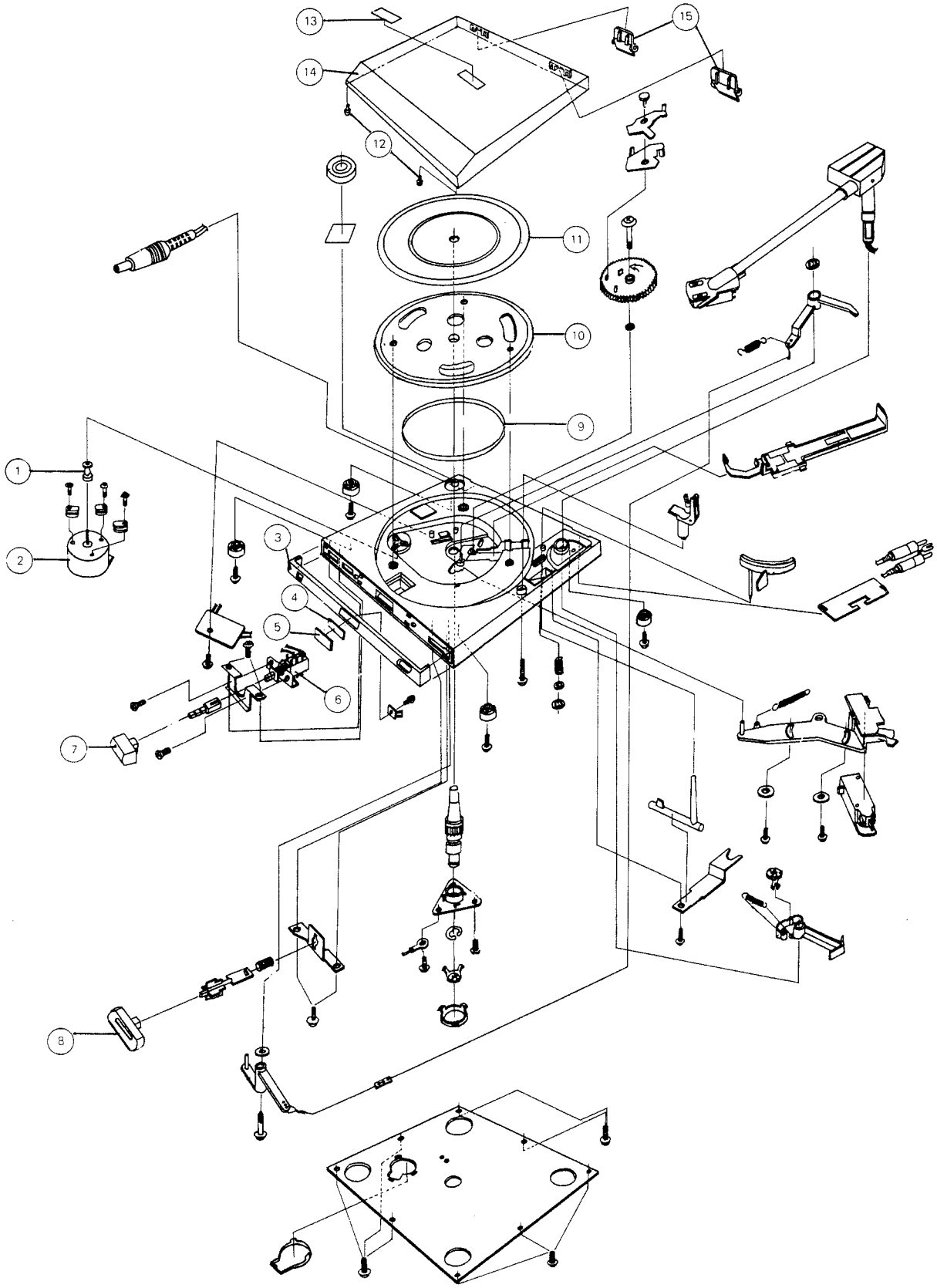
## Ersatzteile · Replacement parts · Pièces détachées · CH 3400 A CL/CS

| Pos. | Art.-Nr. | Bezeichnung |
|---|---|---|
| Q 32 | 284 298 | Transistor KTA 362-Y PNP |
| Q 31 | 283 331 | Transistor KTC 1959-Y |
| Q 33 | 282 077 | Transistor KTA 1015 Y |
| Q 34 | 284 298 | Transistor KTA 362-Y PNP |
| Q 36 | 284 298 | Transistor KTA 362-Y PNP |
| Q 35 | 283 331 | Transistor KTC 1959-Y |
| Q 37 | 283 331 | Transistor KTC 1959-Y |
| Q 38 | 284 298 | Transistor KTA 362-Y PNP |
| Q 40 | 284 298 | Transistor KTA 362-Y PNP |
| Q 39 | 283 331 | Transistor KTC 1959-Y |
| Q 41 | 283 331 | Transistor KTC 1959-Y |
| Q 50 | 283 700 | Transistor DTC 114 TS |
| Q 51 | 283 700 | Transistor DTC 114 TS |
| Q 52 | 287 668 | Transistor DTA 124 E |
| Q 54 | 287 666 | Transistor DTA 144 W |
| Q 55 | 283 700 | Transistor DTC 114 TS |
| Q 56 | 283 700 | Transistor DTC 114 TS |
| Q 57 | 283 331 | Transistor KTC 1959-Y |
| IC 100 | 286 603 | IC MSM 6404-202 |
| IC 101 | 273 253 | IC NJM 4558 D-D |
| IC 102 | 286 606 | IC XC 488 AO |
| IC 103 | 245 236 | IC TL 082 CP |
| IC 104 | 245 236 | IC TL 082 CP |
| IC 105 | 286 605 | IC YM 3015 |
| IC 106 | 283 561 | IC YM 3805 |
| IC 107 | 286 604 | IC HY 6116 P 15 |
| IC 108 | 273 253 | IC NJM 4558 D-D |
| IC 109 | 273 253 | IC NJM 4558 D-D |
| | | **Frontplatte CD** |
| D 902 | 286 612 | LED LTL 2271 A |

| Pos. | Art.-Nr. | Bezeichnung |
|---|---|---|
| bis | | |
| D 904 | 286 612 | LED LTL 2271 A |
| D 901 | 286 613 | LED LTL 2273 A |
| IR 1 | 286 614 | Empfänger |
| DP 1 | 286 615 | LED LTC 3610 Y |
| DP 2 | 286 616 | LED LTC 323 Y |
| K 901 | 286 617 | Schalter |
| bis | | |
| K 908 | 286 617 | Schalter |
| | | **Lautsprecherbox** |
| 1 | 287 323 | CL 3400 Einzeln |
| 2 | 278 425 | TT-Lautsprecher |
| 3 | 278 420 | HT-Lautsprecher |
| | | **Plattenspieler** |
| 1 | 286 627 | Antriebsrolle |
| 2 | 286 628 | Motor |
| 3 | 286 629 | Frontblende |
| 4 | 286 630 | Platte |
| 5 | 286 631 | Fenster |
| 6 | 286 632 | Schalter |
| 7 | 286 633 | Taste Speed |
| 8 | 286 634 | Taste Reject |
| 9 | 286 635 | Riemen |
| 10 | 286 636 | Plattenteller |
| 11 | 286 637 | Plattentellerbelag |
| 12 | 286 638 | Gummitülle |
| 13 | 286 639 | Platte |
| 14 | 286 640 | Abdeckhaube |
| 15 | 286 641 | Scharnier |

Änderungen vorbehalten! Subject to change! Sous réserve de modification!

| **Technische Daten**<br>Meßwerte = typische Werte | **Technical data**<br>Measured values = typical values | **Caractéristiques techniques**<br>Valeurs mesurées = valeurs typiques | CS 3400-A |
|---|---|---|---|
| **Riemenantrieb**<br>elektronisch-geregelter Gleichstrommotor | **Belt drive**<br>electronic-controlled DC motor | **Entraînement à courroie**<br>moteur à courant continu reglé par électronique | |
| **Betriebsspannung** | **Operating voltage** | **Tension de service** | DC 12 V |
| **Plattenteller-Drehzahlen** | **Platter speeds** | **Vitesses du plateau** | 33⅓, 45 U/min. |
| **Gleichlaufschwankungen** nach DIN/WRMS | **Wow and flutter** DIN/WRMS | **Tolérance de vites** DIN/WRMS | ± 0,09/0,05 % |
| **Plattenteller** | **Platter** | **Plateau** | 295 mm Ø |
| **Störspannungsabstand** (nach DIN 45 500)<br>Rumpel-Fremdspannungsabstand<br>Rumpel-Geräuschspannungsabstand | **Signal-to-noise ratio** (DIN 45 500)<br>Rumble unweighted signal-to-noise ratio<br>Rumble weighted signal-to-noise ratio | **Rapport signal/bruit** (DIN 45 500)<br>Signal/tension extérieure de ronflement<br>Signal/tension perturbatrice de ronflement | <br>44 dB<br>66 dB |
| **Effektive Tonarmlänge** | **Effective tonearm length** | **Longueur efficace du bras** | 210 mm |
| **Kröpfungswinkel** | **Offset angle** | **Angle de coude** | 23° |
| **Überhang** | **Overhang** | **Excédent** | 15 mm |
| **Magnet-Tonabnehmer** HiFi DIN 45 500<br>rot R rechter Kanal<br>grün RG rechter Kanal Masse<br>blau GL linker Kanal Masse<br>weiß L linker Kanal | **Cartridge** HiFi DIN 45 500<br>red R right channel<br>green RG right channel ground<br>blue GL left channel ground<br>white L left channel | **Cellule** HiFi DIN 45 500<br>rouge R canal droit<br>vert RG masse canal droit<br>bleu GL masse canal gauche<br>blanc L canal gauche | Dual DMS 239 |
| **Diamantnadel**<br>sphärisch | **Diamond stylus**<br>conical | **Aiguille/diamant**<br>sphériques | Dual DN 239<br>15 µm ○ |
| **Empfohlene Auflagekraft** | **Tracking force** | **Force d'appui** | 25 mN<br>(22,5–27,5 mN) |
| **Übertragungsbereich** | **Frequency range** | **Bande passante** | 10 Hz – 20 kHz |
| **Übertragungsfaktor** | **Output** | **Facteur de transmission** | 4 mV/5 cms$^{-1}$/1 kHz |
| **Compliance** horizontal<br>vertikal | **Compliance** horizontal<br>vertical | **Compliance** horicontale<br>verticale | 16 µm/mN<br>18 µm/mN |
| **Tonabnehmergewicht** | **Cartridge weight** | **Poids de cellule** | 4,5 g |
| **Abmessungen (B × H × T)** | **Dimensions (W × H × D)** | **Dimensions (L × H × P)** | 350 × 92 × 345 |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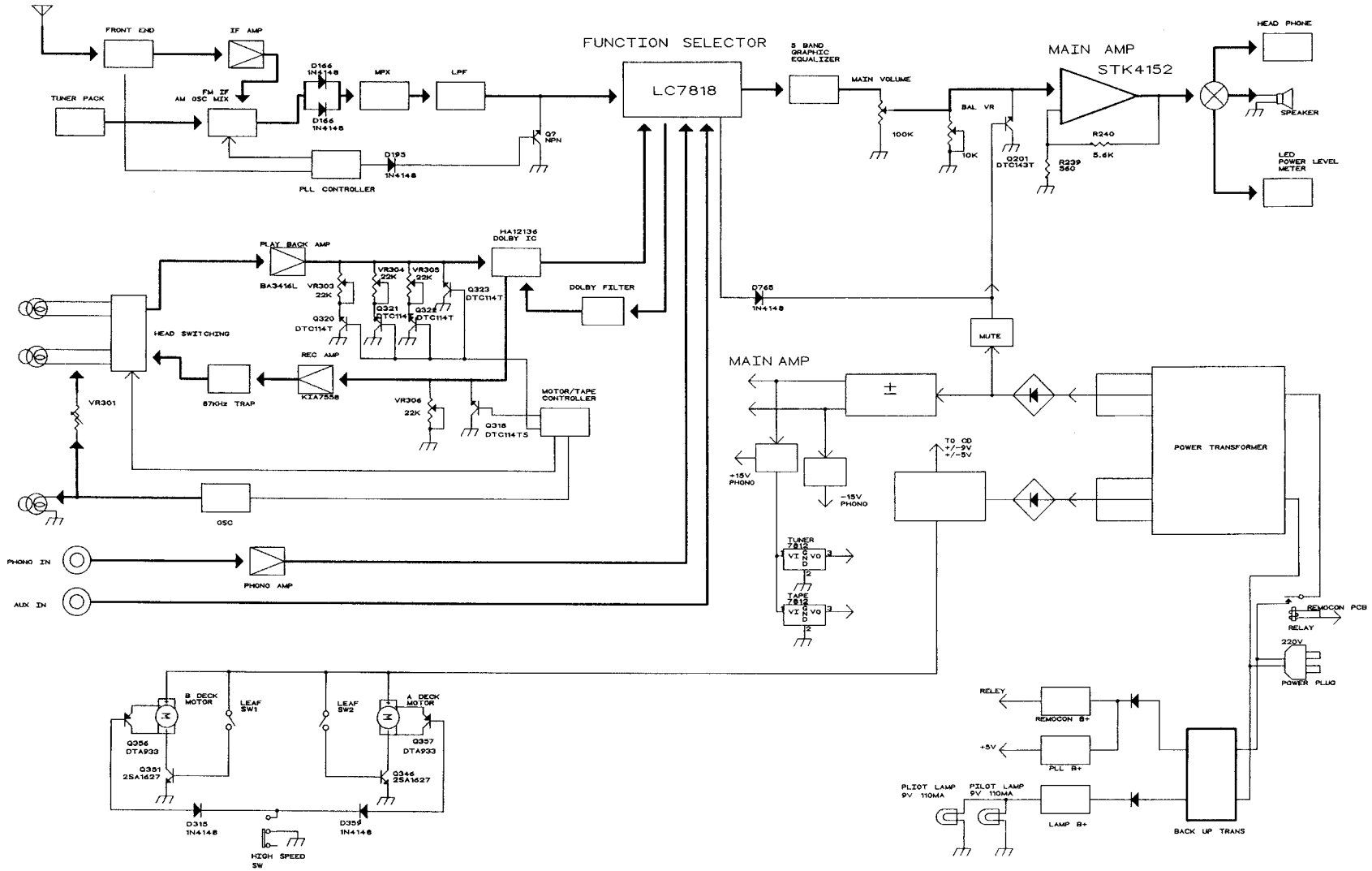
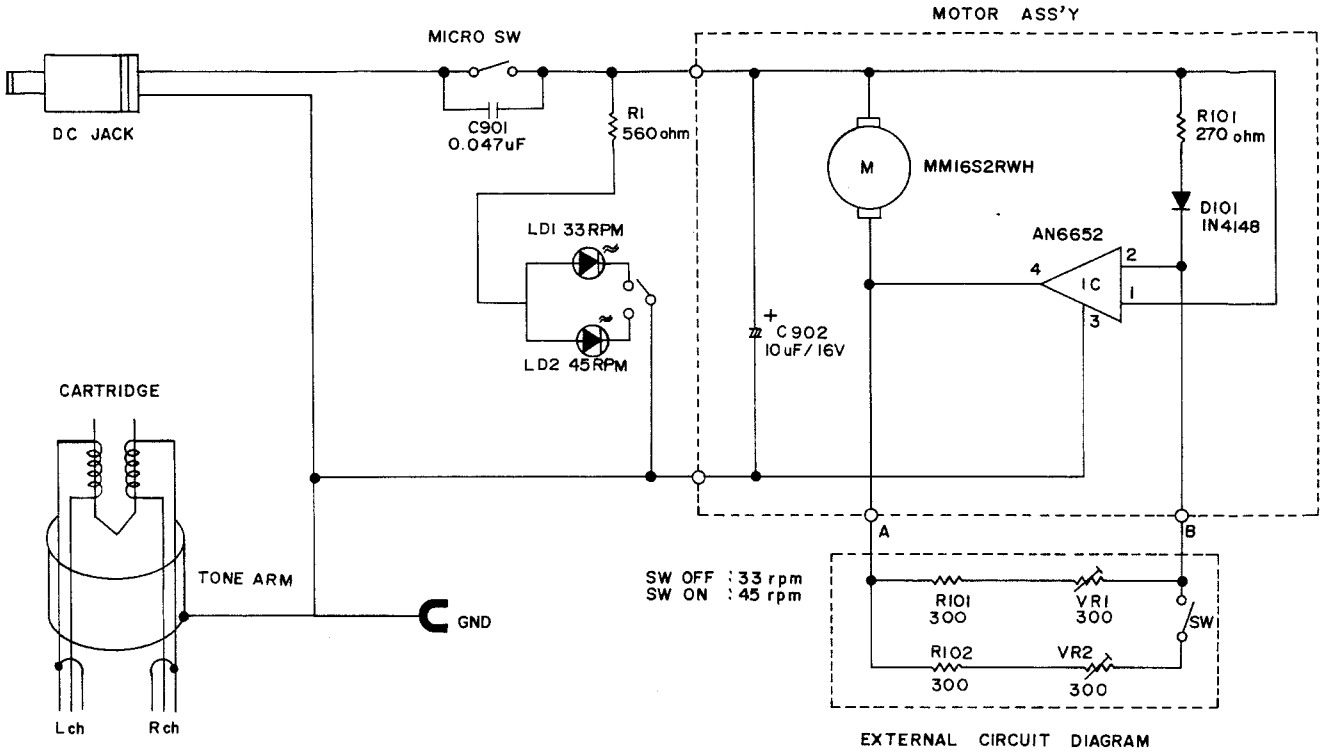
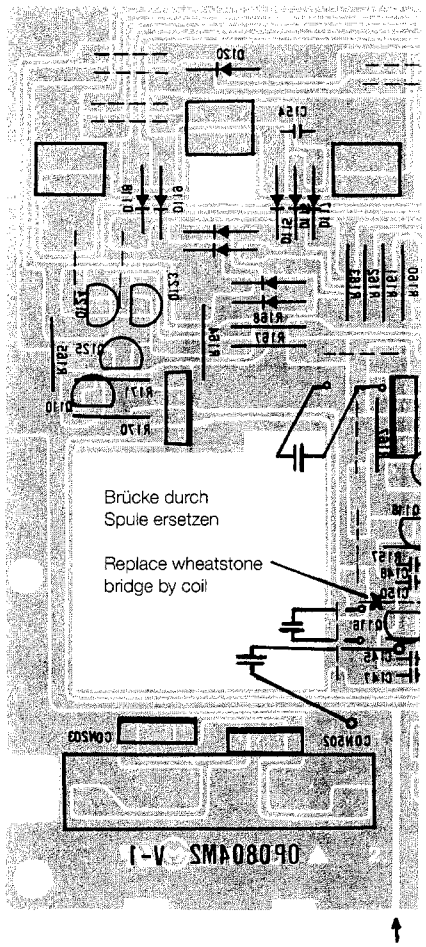
# BLOCK DIAGRAM






Kupferleitung unterbrechen
Interrupt copper lead here

Bei einzelnen Geräten kann bei UKW-Empfang ein Pfeifton entstehen

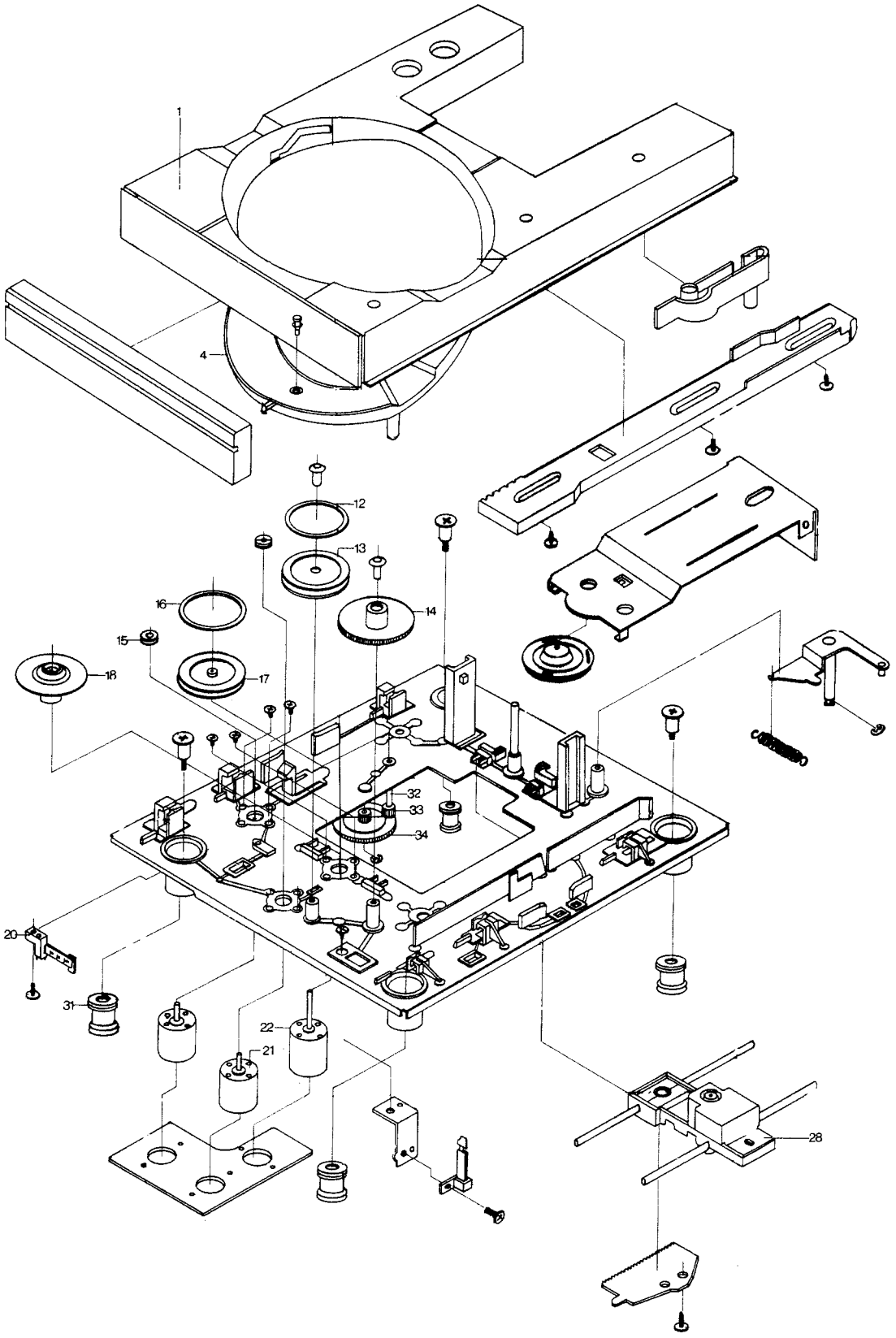
Abhilfe:

1. Leiterbahn nach Zeichnung unterbrechen.
2. Brücke X entfernen und mit Spule 3,3 µH, Art.-Nr. 287 429, ersetzen.
3. Drei Kondensatoren 0,022 µF nach Zeichnung einsetzen.

Problem: Singing tone on UKW.

Solution:

1. Interrupt conducting path like shown on drawing.
2. Take out wheatstone bridge X and replace by coil 3,3 µH, article number 287 429.
3. Put three capacitors 0,022 µF in place like shown on drawing.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# Ersatzteile · Replacement parts · Pièces détachées · CH 3400 A CL/CS

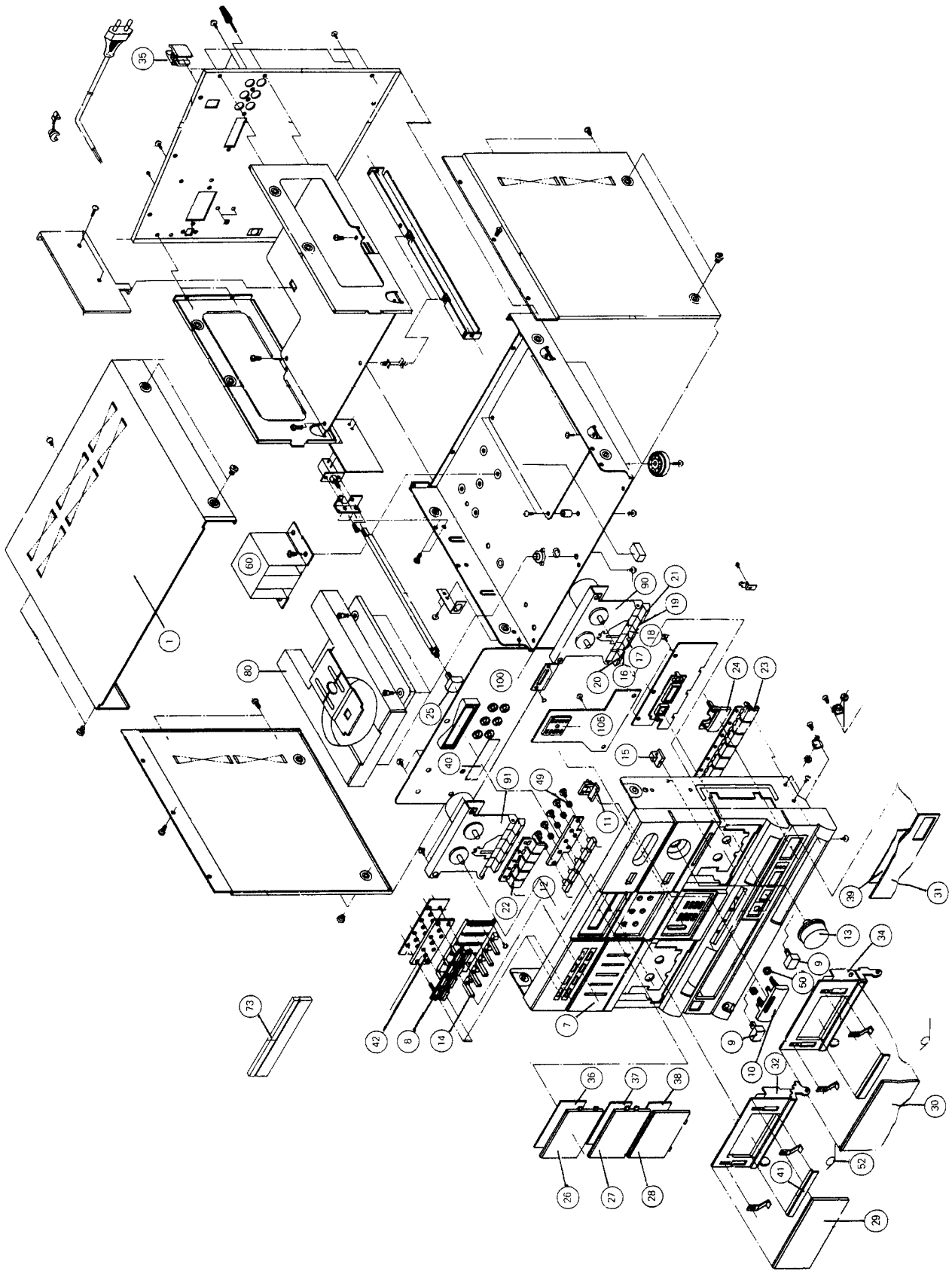
| Pos. | Art.-Nr. | Bezeichnung |
|---|---|---|
| 1 | 287 301 | Gehäuseblech |
| 7 | 287 300 | Frontblende |
| 9 | 286 515 | Taste |
| 10 | 286 516 | Taste |
| 11 | 286 519 | Taste |
| 12 | 286 517 | Taste |
| 13 | 286 507 | Drehknopf |
| 14 | 286 505 | Schiebeknopf |
| 15 | 286 506 | Schiebeknopf |
| 16 | 286 508 | Taste A |
| 17 | 286 509 | Taste B |
| 18 | 286 510 | Taste C |
| 19 | 286 511 | Taste D |
| 20 | 286 512 | Taste E |
| 21 | 286 513 | Taste F |
| 22 | 286 521 | Taste |
| 23 | 286 518 | Taste |
| 24 | 286 520 | Taste |
| 25 | 286 522 | Taste |
| 26 | 286 523 | Fenster 1 |
| 27 | 286 524 | Fenster 2 |
| 28 | 286 525 | Fenster 3 |
| 29 | 286 527 | Fenster A |
| 30 | 286 528 | Fenster B |
| 31 | 286 526 | Fenster CD |
| 32 | 286 547 | Cassettenschacht A |
| 34 | 286 548 | Cassettenschacht B |
| 35 | 287 316 | Antennenhalter |
| 36 | 286 530 | Display 1 |
| 37 | 286 531 | Display 2 |
| 38 | 286 532 | Display 3 |
| 39 | 286 533 | CD Display |
| 40 | 286 529 | Fenster LCD |
| 41 | 286 572 | Abdeckung |
| 42 | 286 588 | Reflector |
| 49 | 286 537 | Feder A |
| 50 | 286 538 | Feder B |
| 52 | 286 536 | Feder |
| 56 | 286 535 | Hebel |
| 60 | 286 541 | Transformator |
| 61 | 286 540 | Trafo Standby |
| 62 | 286 542 | Anschlußbuchse |
| 63 | 286 544 | Schalter |
| 69 | 286 534 | Fuß |
| 73 | 286 546 | Abdeckung |
| 75 | 287 324 | RC 3400 A Fernbedienung |
| | | **CD-Mechanik** |
| 1 | 284 258 | Schublade |
| 3 | 284 259 | Auflage |
| 12 | 284 268 | Riemen |
| 13 | 284 269 | Riemenrad A |
| 14 | 284 270 | Zahnrad B |
| 15 | 284 271 | Antriebsrad |
| 16 | 284 272 | Riemen |
| 17 | 284 273 | Riemenrad |
| 18 | 284 274 | Plattenteller |
| 20 | 284 275 | Schalter |
| 21 | 286 623 | Motor Trak |
| 22 | 286 624 | Motor-Spindle |
| 25 | 284 278 | Schalter |
| 28 | 284 280 | Pick up |
| 32 | 284 283 | Achse |
| | 284 284 | Zahnrad |
| 34 | 284 285 | Zahnrad |
| 90 | 286 618 | Cassettenmechanik |
| 91 | 286 619 | Cassettenmechanik |
| | | **Displayplatte** |
| | 286 588 | Reflector |
| | 286 529 | Fenster LCD |
| LD 201 | 286 589 | LED LTL 307 GE |
| bis | | |
| LD 205 | 286 589 | LED LTL 307 GE |
| LD 211 | 286 590 | LED LTL 5254 |
| LCD 1 | 286 591 | Display Tuner |
| L 1 | 286 592 | Lampe 9 V/60 MA |
| L 2 | 286 592 | Lampe 9 V/60 MA |
| CX 101 | 269 147 | Quarz 4,5 MHz |
| S DIREKT | 286 594 | Schalter |
| S BAND | 286 595 | Schalter |
| Div. | 286 596 | Schalter |
| IC 104 | 286 597 | IC UPD 1708-011-01 |
| IC 203 | 286 598 | IC BA 3812 L |
| VR 203 | 286 599 | Steller |
| bis | | |

| Pos. | Art.-Nr. | Bezeichnung |
|---|---|---|
| VR 207 | 286 599 | Steller |
| VR Balance | 286 593 | Steller |
| D 110 | 223 906 | Diode 1 N 4148 |
| bis | | |
| D 120 | 223 906 | Diode 1 N 4148 |
| D 700 | 223 906 | Diode 1 N 4148 |
| D 750 | 223 906 | Diode 1 N 4148 |
| bis | | |
| D 753 | 223 906 | Diode 1 N 4148 |
| Q 150 | 281 505 | Transistor 2 SA 933 S |
| Q 705 | 281 505 | Transistor 2 SA 933 S |
| Q 110 | 286 576 | Transistor DTC 114 Y |
| Q 116 | 269 146 | Transistor 2 SC 1740 S |
| bis | | |
| Q 119 | 269 146 | Transistor 2 SC 1740 S |
| Q 123 | 269 146 | Transistor 2 SC 1740 S |
| bis | | |
| Q 125 | 269 146 | Transistor 2 SC 1740 S |
| | | **LED-Tastenplatte** |
| LD 206 | 286 579 | LED LTL 3273 A |
| bis | | |
| LD 210 | 286 579 | LED LTL 3273 A |
| S 201 | 286 580 | Schalter |
| bis | | |
| S 205 | 286 580 | Schalter |
| IC 205 | 286 581 | IC BA 6144 |
| Q 207 | 286 577 | Transistor DTC 143 T |
| | | **Empfängerplatte** |
| D 1 | 223 906 | Diode 1 N 4148 |
| D 2 | 223 906 | Diode 1 N 4148 |
| D 4 | 223 906 | Diode 1 N 4148 |
| bis | | |
| D 6 | 223 906 | Diode 1 N 4148 |
| D 302 | 223 906 | Diode 1 N 4148 |
| bis | | |
| D 304 | 223 906 | Diode 1 N 4148 |
| D 305 | 283 378 | Diode DZ 3,0 |
| D 306 | 283 378 | Diode DZ 3,0 |
| D 307 | 223 906 | Diode 1 N 4148 |
| bis | | |
| D 310 | 223 906 | Diode 1 N 4148 |
| D 311 | 227 344 | Diode 1 N 4001 |
| D 312 | 223 906 | Diode 1 N 4148 |
| D 313 | 223 906 | Diode 1 N 4148 |
| D 314 | 227 344 | Diode 1 N 4001 |
| D 315 | 223 906 | Diode 1 N 4148 |
| D 316 | 223 906 | Diode 1 N 4148 |
| D 317 | 283 378 | Diode DZ 3,0 |
| D 318 | 282 828 | Diode ZPD 3,9 |
| D 319 | 223 906 | Diode 1 N 4148 |
| bis | | |
| D 324 | 223 906 | Diode 1 N 4148 |
| D 359 | 223 906 | Diode 1 N 4148 |
| D 364 | 223 906 | Diode 1 N 4148 |
| D 901 | 223 906 | Diode 1 N 4148 |
| D 910 | 223 906 | Diode 1 N 4148 |
| Q 1 | 287 666 | Transistor DTA 144 W |
| Q 3 | 287 666 | Transistor DTA 144 W |
| bis | | |
| Q 8 | 287 666 | Transistor DTA 144 W |
| Q 2 | 286 570 | Transistor DTA 114 E |
| Q 9 | 269 146 | Transistor 2 SC 1740 S |
| Q 10 | 286 576 | Transistor DTC 144 Y |
| Q 11 | 283 331 | Transistor KTC 1959-Y |
| Q 12 | 286 577 | Transistor DTC 143 T |
| bis | | |
| Q 19 | 286 577 | Transistor DTC 143 T |
| Q 21 | 286 571 | Transistor DTA 114 T |
| Q 22 | 281 505 | Transistor 2 SA 933 S |
| Q 328 | 287 667 | Transistor DTA 124 T |
| Q 331 | 287 668 | Transistor DTA 124 E |
| Q 332 | 287 668 | Transistor DTA 124 E |
| Q 335 | 286 577 | Transistor DTC 143 T |
| Q 336 | 269 146 | Transistor 2 SC 1740 S |
| Q 337 | 286 577 | Transistor DTC 143 T |
| Q 338 | 286 577 | Transistor DTC 143 T |
| Q 339 | 287 666 | Transistor DTA 144 W |
| bis | | |
| Q 341 | 287 666 | Transistor DTA 144 W |
| Q 342 | 287 667 | Transistor DTA 124 T |
| Q 343 | 286 577 | Transistor DTC 143 T |
| Q 345 | 286 577 | Transistor DTC 143 T |
| Q 346 | 282 086 | Transistor KTC 1627 A |

## Ersatzteile · Replacement parts · Pièces détachées · CH 3400 A CL/CS

| Pos. | Art.-Nr. | Bezeichnung |
|---|---|---|
| Q 347 | 286570 | Transistor DTA 114 E |
| Q 348 | 287666 | Transistor DTA 144 W |
| Q 349 | 287666 | Transistor DTA 144 W |
| Q 350 | 286570 | Transistor DTA 114 E |
| Q 351 | 282086 | Transistor KTC 1627 A |
| Q 352 | 286577 | Transistor DTC 143 T |
| Q 353 | 269146 | Transistor 2 SC 1740 S |
| Q 354 | 286577 | Transistor DTC 143 T |
| Q 356 | 281505 | Transistor 2 SA 933 S |
| Q 357 | 281505 | Transistor 2 SA 933 S |
| Q 366 | 283700 | Transistor DTC 114 TS |
| Q 390 | 287668 | Transistor DTA 124 E |
| IC 1 | 286584 | IC TC 9150 P |
| IC 1 | 286722 | IC 78 L 05 |
| IC 2 | 271075 | IC NJM 7805 |
| IC 2 | 286573 | IC TC 4093 BP |
| IC 3 | 283564 | IC BA 6218 |
| | | **Grundplatte** |
| 116 | 286549 | Lautsprecherklemmen |
| 117 | 286550 | Antennenbuchse |
| 117 | 286551 | Cinchbuchse |
| 118 | 287302 | Tuner FM |
| VT 101 | 275855 | Diode SVC 321 |
| bis | | |
| VT 103 | 275855 | Diode SVC 321 |
| D 103 | 223906 | Diode 1 N 4148 |
| D 104 | 223906 | Diode 1 N 4148 |
| D 108 | 223906 | Diode 1 N 4148 |
| D 150 | 282063 | Diode DZ 12 BM |
| D 160 | 223906 | Diode 1 N 4148 |
| D 166 | 223906 | Diode 1 N 4148 |
| D 202 | 223906 | Diode 1 N 4148 |
| bis | | |
| D 205 | 223906 | Diode 1 N 4148 |
| D 289 | 223906 | Diode 1 N 4148 |
| D 299 | 223906 | Diode 1 N 4148 |
| D 302 | 223906 | Diode 1 N 4148 |
| D 335 | 283378 | Diode DZ 3,0 |
| D 360 | 223906 | Diode 1 N 4148 |
| bis | | |
| D 363 | 223906 | Diode 1 N 4148 |
| D 501 | 282061 | Diode 1 N 5402 |
| bis | | |
| D 504 | 282061 | Diode 1 N 5402 |
| D 505 | 226501 | Diode 1 N 4002 |
| D 506 | 226501 | Diode 1 N 4002 |
| D 511 | 282173 | Diode DZ 15 B |
| D 512 | 226501 | Diode 1 N 4002 |
| bis | | |
| D 517 | 226501 | Diode 1 N 4002 |
| D 518 | 282062 | Diode DZ 9,1 BM |
| D 519 | 282062 | Diode DZ 9,1 BM |
| D 520 | 283552 | Diode DZ 5,6 |
| D 521 | 283714 | Diode DZ 6,8 |
| D 522 | 226501 | Diode 1 N 4002 |
| D 523 | 226501 | Diode 1 N 4002 |
| D 524 | 223906 | Diode 1 N 4148 |
| D 525 | 283553 | Diode DZ 7,5 |
| D 527 | 283553 | Diode DZ 7,5 |
| D 580 | 282173 | Diode DZ 15 B |
| D 599 | 223906 | Diode 1 N 4148 |
| D 708 | 223906 | Diode 1 N 4148 |
| D 756 | 223906 | Diode 1 N 4148 |
| D 765 | 223906 | Diode 1 N 4148 |
| D 780 | 283553 | Diode DZ 7,5 |
| D 909 | 223906 | Diode 1 N 4148 |
| D 920 | 282378 | LED SLR 34 MC 3 GN |
| D 921 | 282063 | Diode DZ 12 BM |
| D 930 | 223906 | Diode 1 N 4148 |
| Q 102 | 286570 | Transistor DTA 114 E |
| Q 103 | 286570 | Transistor DTA 114 E |
| Q 104 | 269146 | Transistor 2 SC 1740 S |
| Q 107 | 269146 | Transistor 2 SC 1740 S |
| Q 109 | 286577 | Transistor DTC 143 T |
| Q 111 | 269146 | Transistor 2 SC 1740 S |
| Q 112 | 281505 | Transistor 2 SA 933 S |
| Q 113 | 286570 | Transistor DTA 114 E |
| Q 114 | 286576 | Transistor DTC 114 Y |
| Q 115 | 286576 | Transistor DTC 114 Y |
| Q 120 | 281505 | Transistor 2 SA 933 S |
| Q 121 | 286570 | Transistor DTA 114 E |
| Q 122 | 286576 | Transistor DTC 114 Y |
| Q 123 | 281505 | Transistor 2 SA 933 S |
| Q 124 | 269146 | Transistor 2 SC 1740 S |

| Pos. | Art.-Nr. | Bezeichnung |
|---|---|---|
| Q 125 | 269146 | Transistor 2 SC 1740 S |
| Q 169 | 269146 | Transistor 2 SC 1740 S |
| Q 201 | 286577 | Transistor DTC 143 T |
| Q 202 | 281505 | Transistor 2 SA 933 S |
| Q 501 | 283696 | Transistor KTD 1406 Y |
| Q 502 | 282095 | Transistor KTA 965 Y |
| Q 505 | 282095 | Transistor KTA 965 Y |
| Q 503 | 270183 | Transistor 2 SA 562 Y |
| Q 504 | 283696 | Transistor KTD 1406 Y |
| Q 506 | 283696 | Transistor KTD 1406 Y |
| Q 525 | 287312 | Transistor KTD 525 |
| Q 301 | 283700 | Transistor DTC 114 TS |
| Q 302 | 286577 | Transistor DTC 143 T |
| Q 303 | 286577 | Transistor DTC 143 T |
| Q 304 | 284787 | Transistor KTD 1302 |
| Q 305 | 284787 | Transistor KTD 1302 |
| Q 306 | 283700 | Transistor DTC 114 TS |
| Q 307 | 284787 | Transistor KTD 1302 |
| Q 308 | 284787 | Transistor KTD 1302 |
| Q 309 | 269146 | Transistor 2 SC 1740 S |
| Q 310 | 269146 | Transistor 2 SC 1740 S |
| Q 311 | 286577 | Transistor DTC 143 T |
| bis | | |
| Q 316 | 286577 | Transistor DTC 143 T |
| Q 317 | 287668 | Transistor DTA 124 E |
| bis | | |
| Q 319 | 287668 | Transistor DTA 124 E |
| Q 320 | 283700 | Transistor DTA 114 TS |
| bis | | |
| Q 325 | 283700 | Transistor DTA 114 TS |
| Q 326 | 287668 | Transistor DTA 124 E |
| bis | | |
| Q 328 | 287668 | Transistor DTA 124 E |
| Q 329 | 283700 | Transistor DTC 114 TS |
| Q 330 | 269146 | Transistor 2 SC 1740 S |
| Q 331 | 287668 | Transistor DTA 124 E |
| Q 332 | 287668 | Transistor DTA 124 E |
| Q 333 | 286577 | Transistor DTC 143 T |
| Q 334 | 286577 | Transistor DTC 143 T |
| Q 360 | 269146 | Transistor 2 SC 1740 S |
| bis | | |
| Q 362 | 269146 | Transistor 2 SC 1740 S |
| Q 363 | 286577 | Transistor DTC 143 T |
| Q 364 | 269146 | Transistor 2 SC 1740 S |
| Q 365 | 269146 | Transistor 2 SC 1740 S |
| Q 367 | 286577 | Transistor DTC 143 T |
| Q 368 | 286577 | Transistor DTC 143 T |
| Q 369 | 269146 | Transistor 2 SC 1740 S |
| bis | | |
| Q 371 | 269146 | Transistor 2 SC 1740 S |
| Q 755 | 286577 | Transistor DTC 143 T |
| IC 101 | 284502 | IC LA 1265 |
| IC 102 | 286568 | IC AN 7470 |
| IC 150 | 271133 | IC NJM 78 M 12 |
| IC 201 | 283725 | IC BA 4558 N |
| IC 202 | 282085 | IC LC 7818 |
| IC 204 | 286585 | IC STK 4152 II |
| IC 301 | 286567 | IC BA 3461 BL |
| IC 302 | 286565 | IC HA 12136 |
| IC 303 | 283332 | IC KIA 75558 P |
| IC 502 | 271075 | IC NJM 7805 |
| IC 580 | 271133 | IC NJM 78 M 12 |
| IC 581 | 271133 | IC NJM 78 M 12 |
| | | **Kopfh.-Buchsenplatte** |
| 121 | 286578 | Kopfhörerbuchse |
| | | **Volume-Stellerplatte** |
| 126 | 286587 | Steller mit Motor |
| | | **Grundplatte CD** |
| D 101 | 283714 | Diode DZ 6,8 |
| D 301 | 286607 | Diode HZ 3,6 |
| VD 101 | 275158 | Diode SVC 211 SP |
| OSC | 286602 | Spule |
| XT 1 | 284303 | Kristall |
| XT 2 | 283548 | Quarz 8,6436 MHz |
| Q 10 | 286577 | Transistor DTC 143 T |
| bis | | |
| Q 17 | 286577 | Transistor DTC 143 T |
| Q 20 | 281505 | Transistor 2 SA 933 S |
| bis | | |
| Q 26 | 281505 | Transistor 2 SA 933 S |
| Q 27 | 283700 | Transistor DTC 114 TS |
| Q 28 | 282076 | Transistor KTC 1815 Y |
| Q 30 | 284298 | Transistor KTA 362-Y PNP |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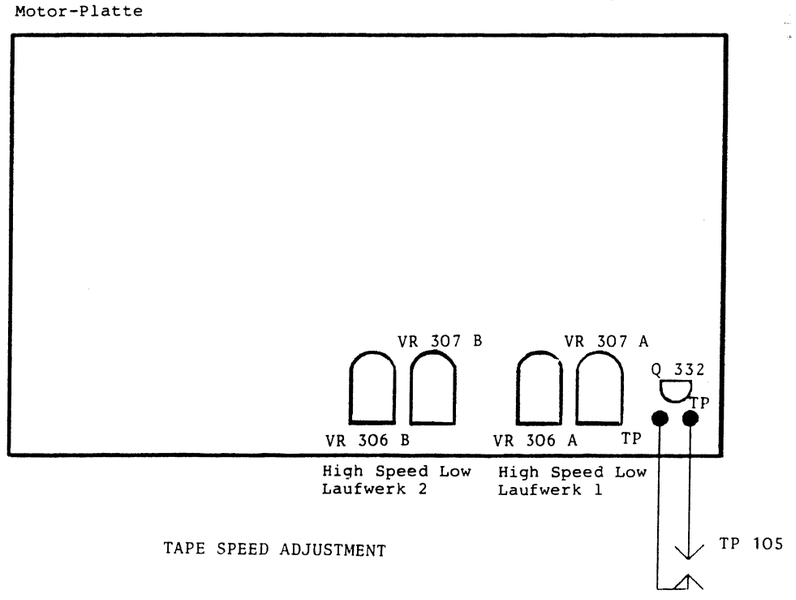
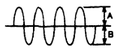
## Tuning instructions for CC 3400 A

| Signal source | Signal source setting | Equipment setting | Connection of measuring instrument | Item to be tuned | Tuning Remarks |
|---|---|---|---|---|---|
| At all measures the volume control must be in position 0. | | | | | |
| **1. Azimut** deck 1 + 2 | | | | | |
| Test cassette | 10 kHz | Dolby: off<br>Normal: on | AF voltmeter<br>to TP 101 L/R<br>or C 324 L/R | Azimut screw to left of the head (hole over the control REWIND) | Use lacquer to fix at maximum |
| **2. Tape speed** deck 1 + 2 Attention: adjust High Speed first | | | | | |
| Test cassette | 3150 Hz | Normal: on | Frequency counter<br>to TP 101 L/R<br>or C 324 L/R | Deck 1 VR 306 A<br>Deck 2 VR 306 B | High Speed 6300 Hz<br>Brücke TP 105 |
| | | | | Deck 1 VR 307 A<br>Deck 2 VR 307 B | 3150 Hz |
| **3. Playback level** deck 1 + 2 | | | | | |
| Test cassette<br>Dolby level | 400 Hz | Normal: on<br>Dolby: off | AF voltmeter<br>to TP 101 L/R<br>or C 324 L/R | Deck 1 VR 304 L/R | 650 mV |
| | | | | Deck 2 VR 305 L/R | |
| **4. Copy level** at High Speed | | | | | |
| Test cassette<br>Dolby level | 400 Hz | Normal: on<br>Deck 2 Rec: on | AF voltmeter<br>to TP 101 L/R<br>or C 324 L/R | Deck 1 VR 303 L/R | ca. 580 mV |
| **5. Quick tuning for recording level and RF premagnetization** (rough tuning) | | | | | |
| AF generator<br>to Input L/R<br>Aux/Video | 400 Hz approx. 250 mV<br>= 580 mV to TP 101 | Dolby: off<br>Record: on<br>Tape: Fe I | AF voltmeter to<br>TP 104 R<br>TP 104 L<br>TP 102 R<br>TP 102 L | <br>VR 302<br>VR 301<br>VR 306 R<br>VR 306 L | <br>ca. 6.5 mV<br>ca. 6.5 mV<br>ca. 40.0 mV<br>ca. 40.0 mV |
| **6. Recording level** deck 2 | | | | | |
| AF generator<br>to Input L/R<br>Aux/Video | 400 Hz approx. 250 mV<br>= 580 mV to TP 101 | Dolby: off<br>Record: on<br>Tape: Fe I | AF voltmeter<br>to TP 101 L/R<br>or C 324 L/R | VR 306 L/R | 580 mV<br>during play |
| **7. RF premagnetization** deck 2 | | | | | |
| AF generator<br>to Input L/R<br>Aux/Video | 10 kHz approx. 25 mV<br>= 58 mV to TP 101 | Dolby: off<br>Record: on<br>Tape: Fe I | AF voltmeter<br>to TP 101 L/R<br>or C 324 L/R | VR 301 L<br>VR 302 R | 58 mV<br>during play |
| Attention: Please proof tuning positions 5, 6 and 7 after replacing of the erase heads.<br>Check the recording level again after setting the premagnetization.<br>If it deviates by more than 1.5 dB repeat tuning positions 6 + 7 | | | | | |




## Abgleichanleitung CD 3400

| Signalquelle | Einstellung Gerät | Meßgeräteanschluß | Abgleichposition | Abgleichbemerkungen |
|---|---|---|---|---|
| **Focus offset** | | | | |
| | Stop | DC Voltmeter an TP 02 | VR 101 | 0 V DC abgleichen |
| **EF Balance** | | | | |
| Testplatte Phillips 5 A | 1. Netz aus | TP 05 und TP 09<br>kurzschließen<br>Osci an TP 04 | | |
| | 2. Netz ein | | VR 201 | DC 0 V  |
| | | Kurzschluß entfernen | | |
| **Tracking ERROR** | | | | |
| | play | Millivoltmeter an TP 05 | VR 301 | 46 mV AC |
| Mit Testplatte 5 A Titel Nr. 9 und 17 prüfen.<br>Alle Spannungen gegen TP 08 G ND gemessen.<br>EFM Signal an TP 01 1,5 V SS | | | | |

## Tuning instructions for CD 3400 A

| Signal source | Equipment setting | Connection of measuring instrument | Item to be tuned | Tuning remarks |
|---|---|---|---|---|
| **Focus offset** | | | | |
| | Stop | DC Voltmeter to TP 02 | VR 101 | tune 0 V DC |
| **EF Balance** | | | | |
| | 1. Power OFF | short-circuit TP 05<br>and TP 09<br>oscilloscope to TP 04 | | |
| | 2. Power ON | | VR 201 | DC 0 V |
| | | Remove short circuit | | |
| **Tracking ERROR** | | | | |
| | play | Millivoltmeter to TP 05 | VR 301 | 46 mV AC |
| Proof title No. 9 and 17 with test board 5 A.<br>All voltages measured against TP 08 G ND.<br>EFM signal to TP 01 1.5 V SS | | | | |

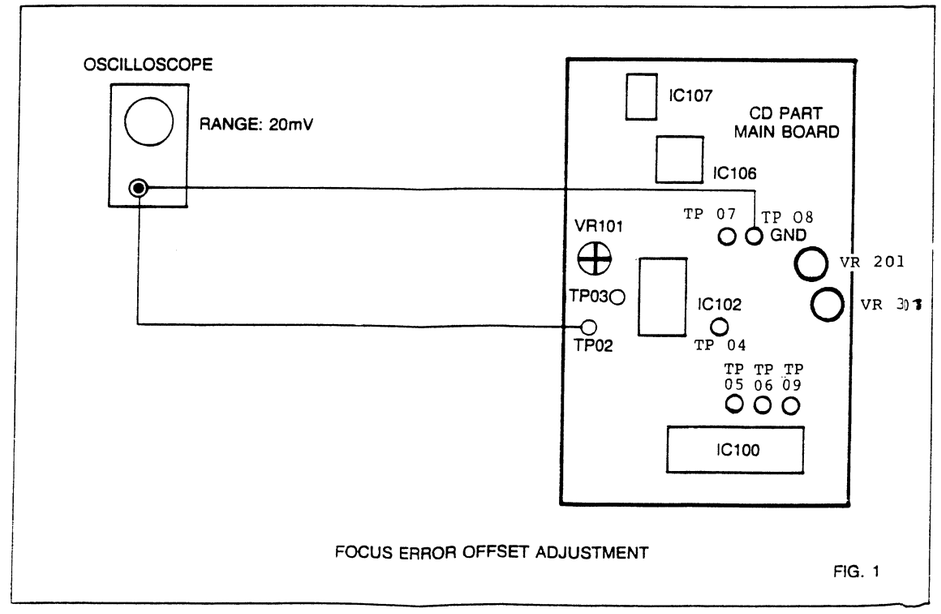
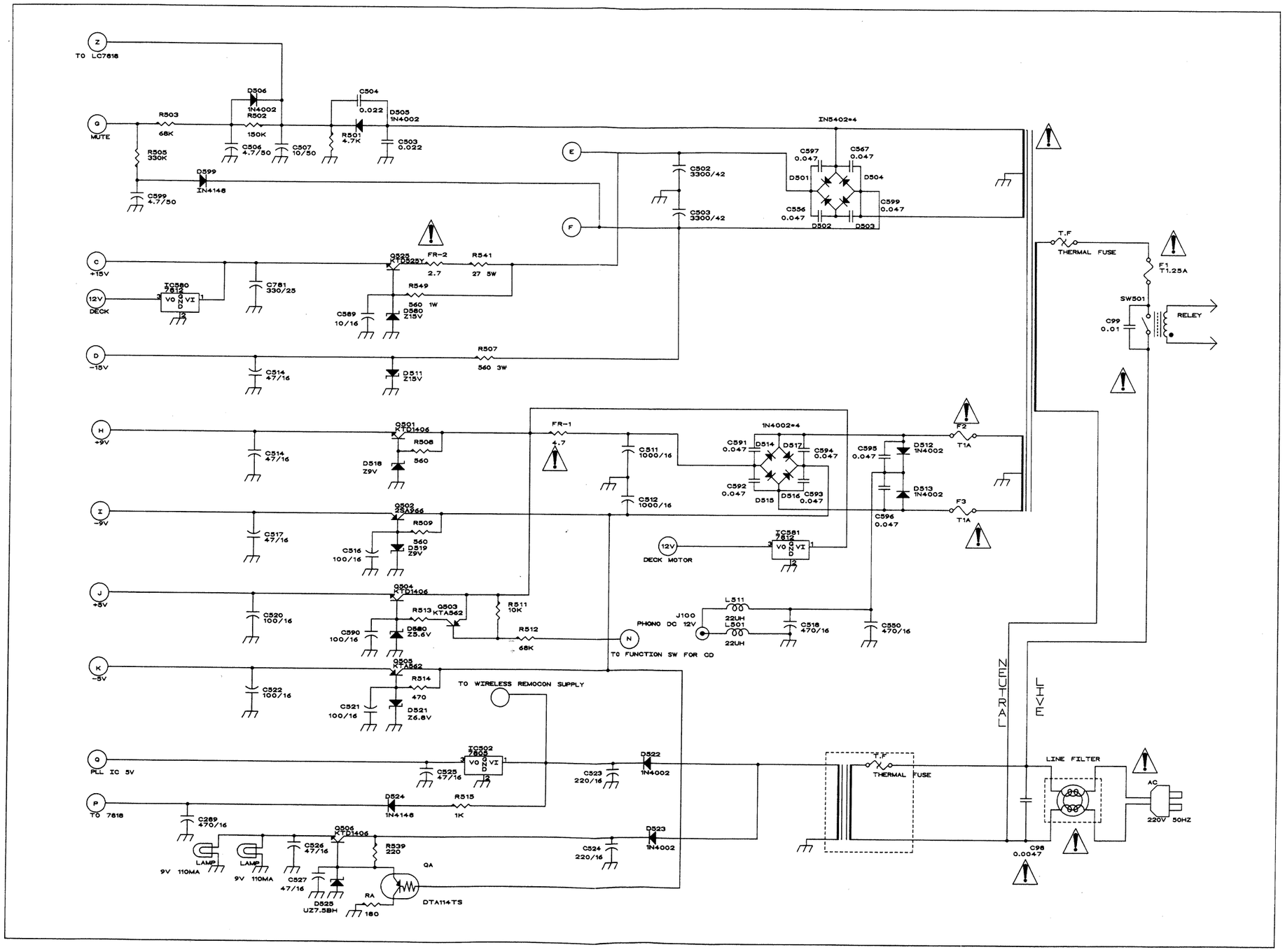
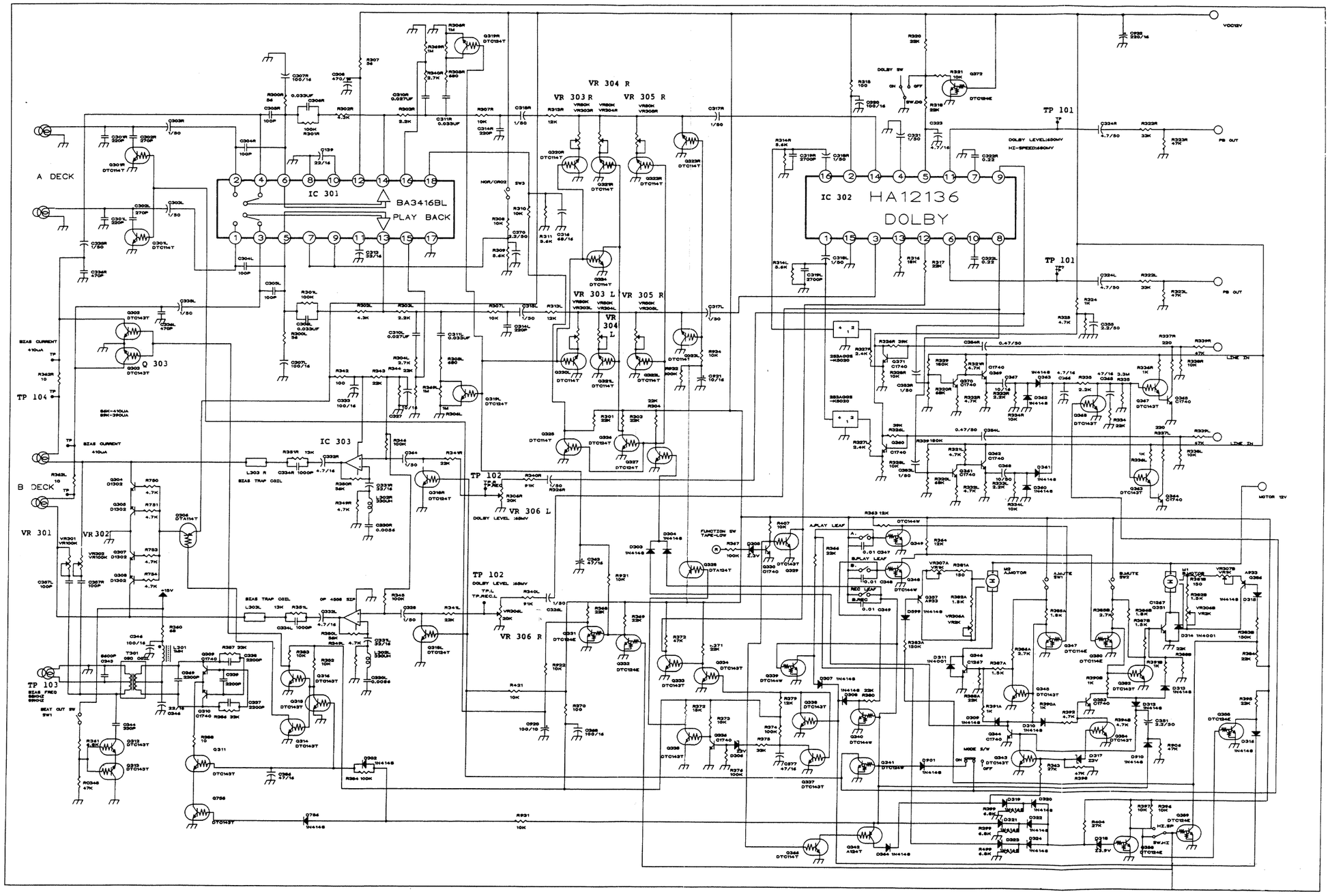



FIG. 1

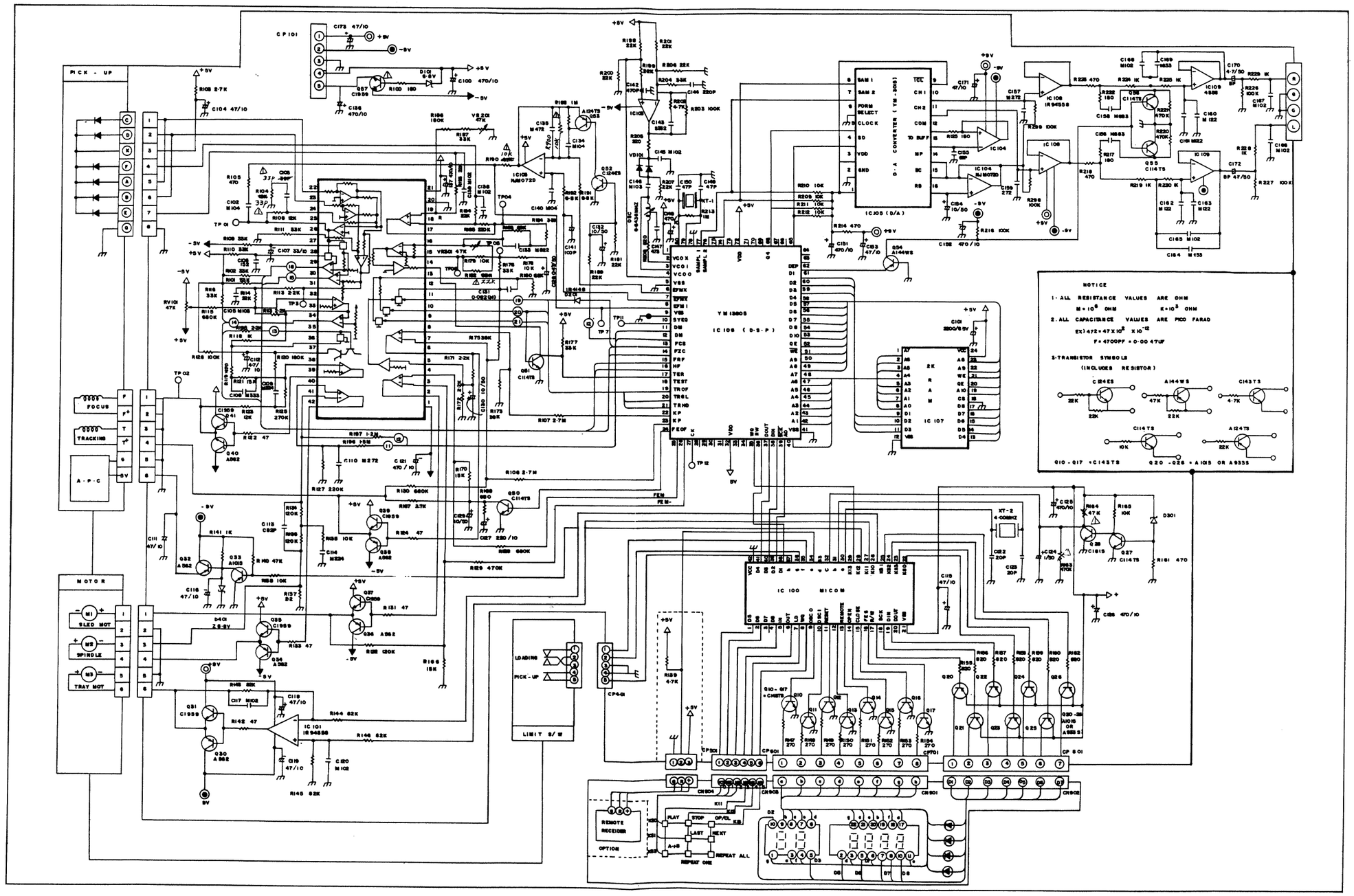
# POWER


Z
TO LC7618
D506
1N4002
R503
68K
R502
150K
C504
0.022
D505
1N4002
R501
4.7K
C503
0.022
C506
4.7/50
C507
10/50
Q
MUTE
R505
330K
D599
IN4148
C599
4.7/50
E
F
IN5402*4
C502
3300/42
C503
3300/42
C597
0.047
C567
0.047
D501
D504
C599
0.047
C556
0.047
D502
D503
C
+15V
12V
DECK
IC580
7812
VO GND VI
C781
330/25
Q525
KTD525Y
FR-2
2.7
R541
27 5W
R549
560 1W
C589
10/16
D580
Z15V
D
-15V
R507
560 3W
C514
47/16
D511
Z15V
T.F
THERMAL FUSE
F1
T1.25A
SW501
C99
0.01
RELEY
H
+9V
Q501
KTD1406
R508
560
D518
Z9V
C514
47/16
FR-1
4.7
C511
1000/16
C512
1000/16
1N4002*4
C591
0.047
D514
D517
C594
0.047
C592
0.047
D515
D516
C593
0.047
C595
0.047
D512
1N4002
D513
1N4002
C596
0.047
F2
T1A
F3
T1A
I
-9V
Q502
2SA566
R509
560
D519
Z9V
C517
47/16
C516
100/16
12V
DECK MOTOR
IC581
7812
VO GND VI
J
+9V
Q504
KTD1406
R513
Q503
KTA562
R511
10K
R512
68K
C520
100/16
C590
100/16
D580
Z5.6V
J100
PHONO DC 12V
L511
22UH
L501
22UH
C518
470/16
C550
470/16
N
TO FUNCTION SW FOR CD
K
-5V
Q505
KTA562
R514
470
C522
100/16
C521
100/16
D521
Z6.8V
TO WIRELESS REMOCON SUPPLY
ZENITH
LINE
Q
PLL IC 5V
IC502
7805
VO GND VI
C525
47/16
C523
220/16
D522
1N4002
P
TO 7618
D524
1N4148
R515
1K
C289
470/16
LAMP
9V 110MA
LAMP
9V 110MA
Q506
KTD1406
C526
47/16
R539
220
QA
C527
47/16
D525
UZ7.5BH
RA
180
DTA114TS
C524
220/16
D523
1N4002
T.F
THERMAL FUSE
LINE FILTER
AC
220V 50HZ
C98
0.0047

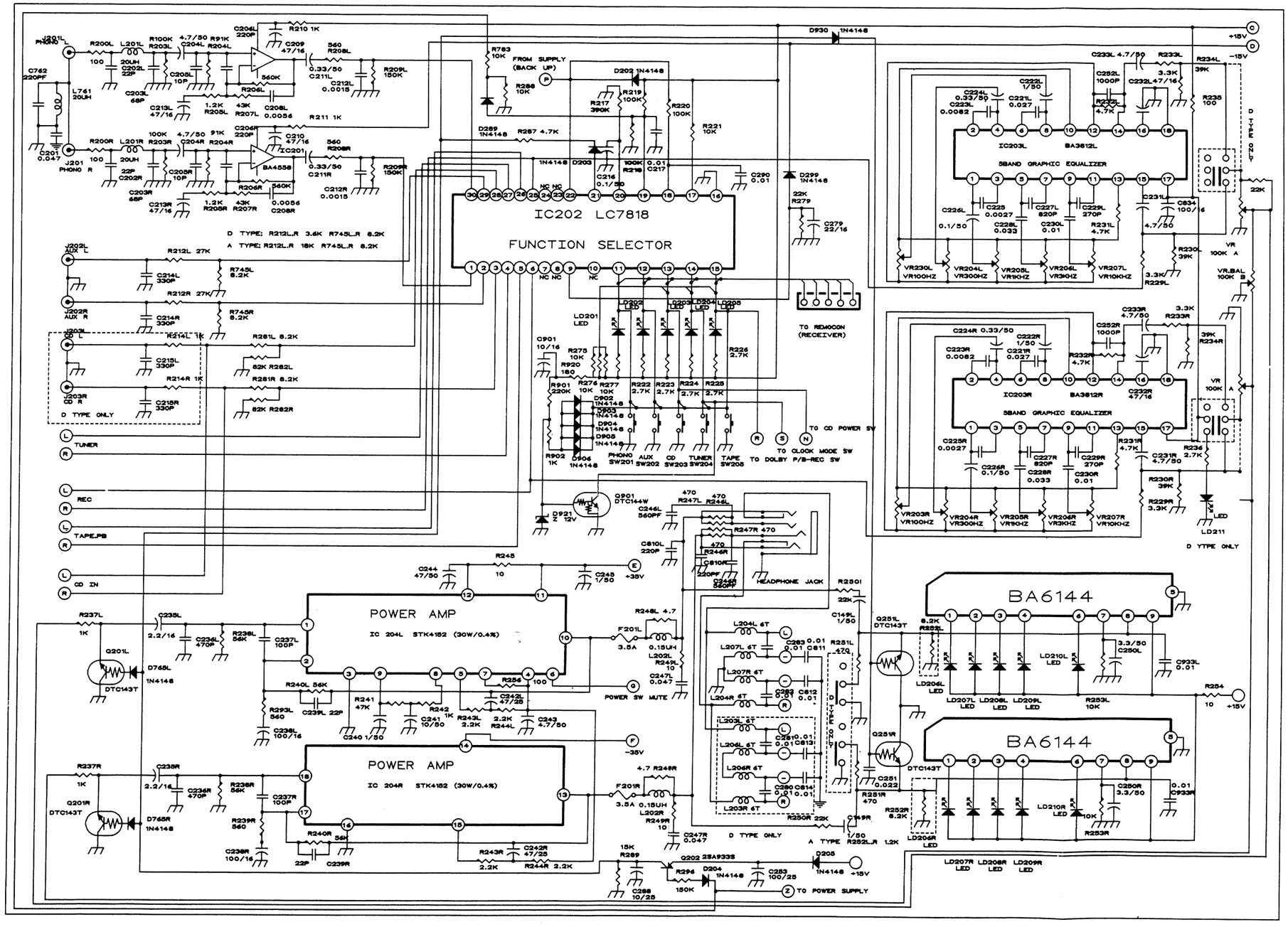
# TAPE


A DECK
B DECK
IC 301
BA3416BL
PLAY BACK
IC 302
HA12136
DOLBY
IC 303
VR 303 R
VR 304 R
VR 305 R
VR 303 L
VR 304 L
VR 305 R
VR 306 L
VR 306 R
VR 301
VR 302
Q 303
TP 101
TP 102
TP 103
TP 104
FB OUT
LINE IN
MOTOR 12V
VCC15V
DOLBY SW
ON
OFF
DOLBY LEVEL:650mV
HI-SPEED:1650mV
BIAS CURRENT
410uA
BIAS FREQ
88KHZ
99KHZ
BEAT CUT SW
SW1
TP.REC.L
DOLBY LEVEL :68mV
L303 R
L303L
BIAS TRAP COIL
T301
OSC
FUNCTION SW
TAPE-LOW
A.PLAY LEAD
B.PLAY LEAD
REC LEAD
A.MUTE
B.MUTE
MODE S/W
HZ-SP
SW-HZ
OP 4558 SIP

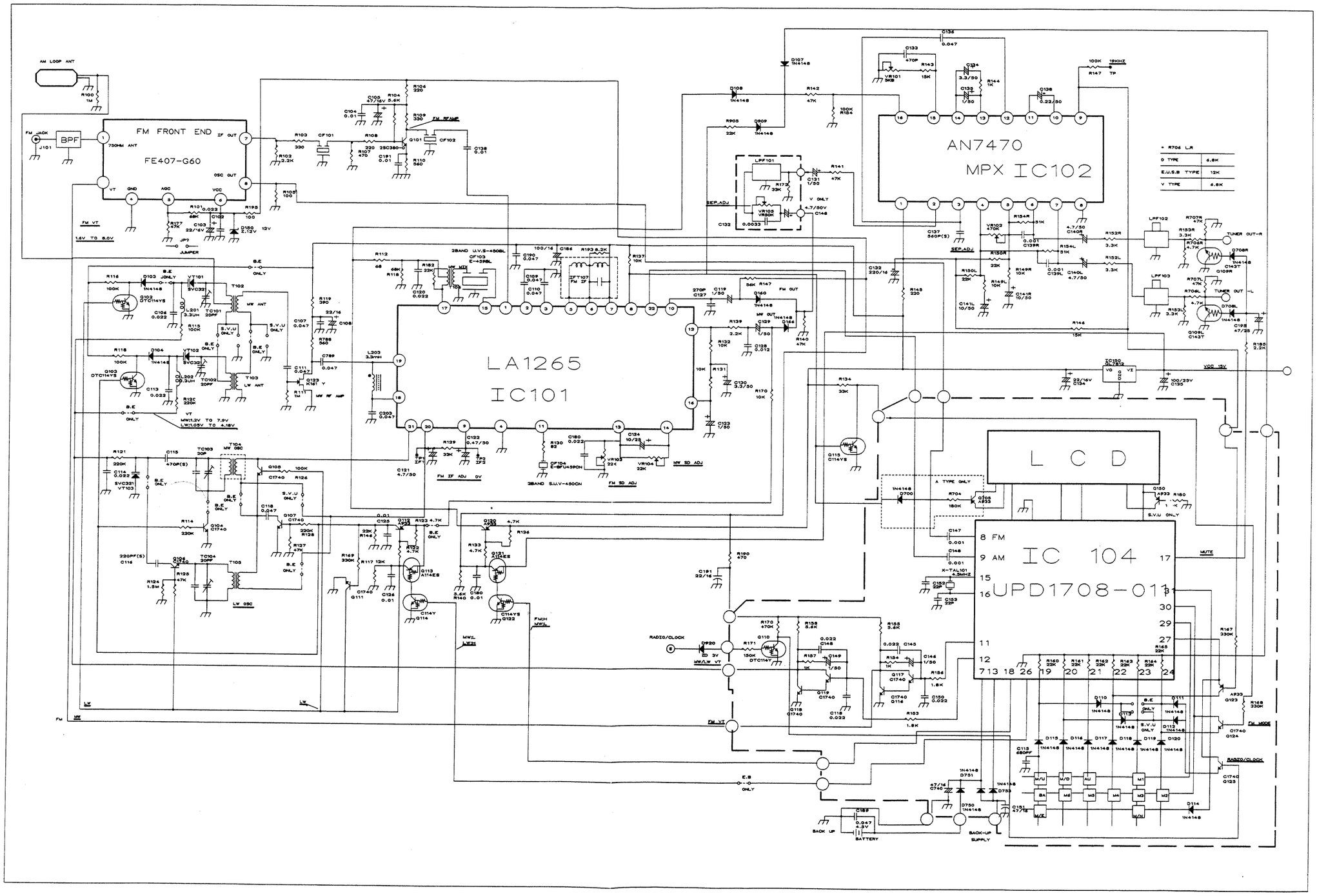
# CD SCHEMATIC DIAGRAM

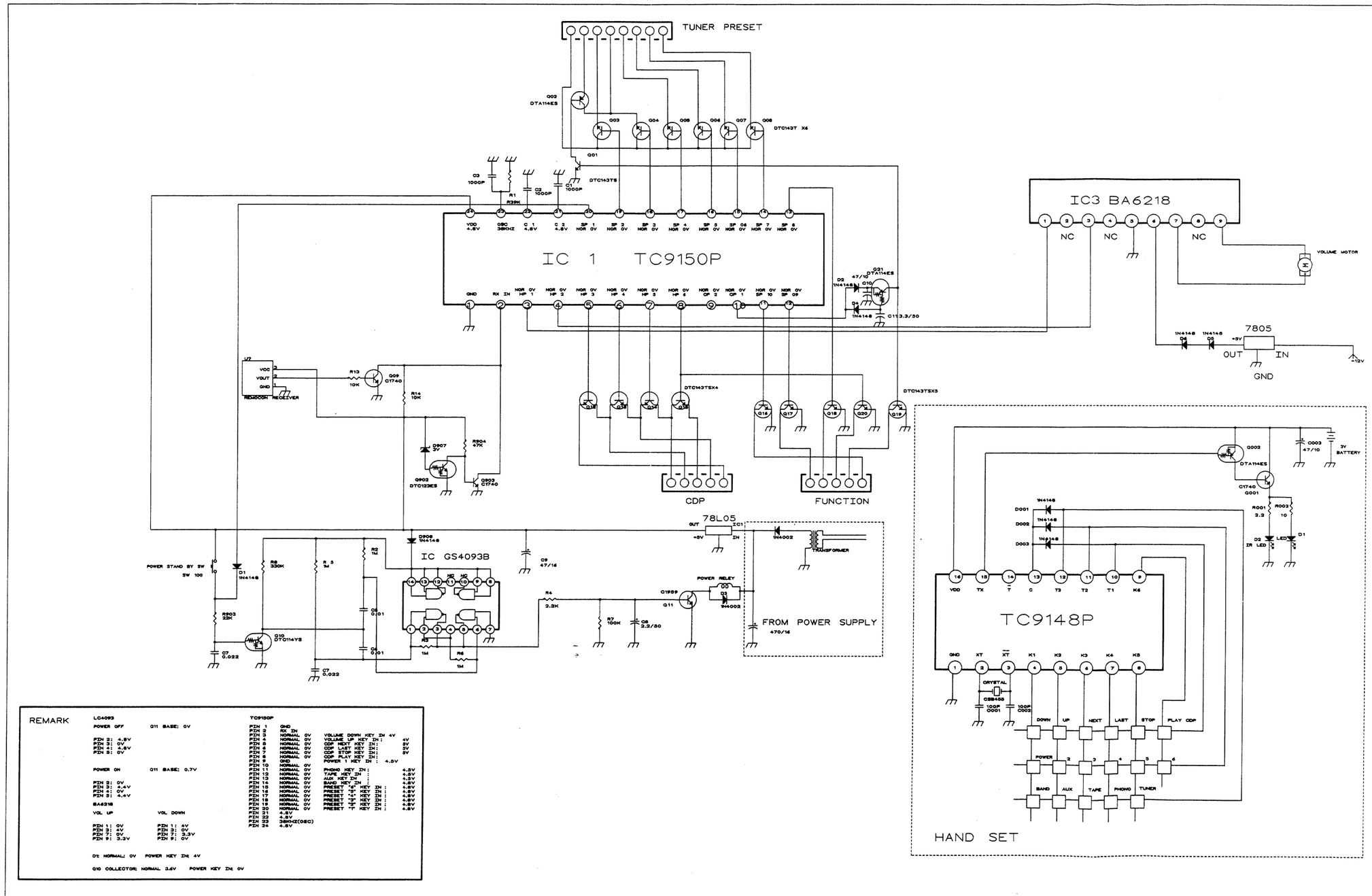


# AMP


IC202 LC7818
FUNCTION SELECTOR
IC201 BA4558
IC203L BA3612L
IC203R BA3612R
5BAND GRAPHIC EQUALIZER
POWER AMP
IC 204L STK4152 (30W/0.4%)
POWER AMP
IC 204R STK4152 (30W/0.4%)
BA6144
BA6144
D TYPE: R212L,R 3.6K R745L,R 8.2K
A TYPE: R212L,R 18K R745L,R 8.2K
D TYPE ONLY
A TYPE R252L,R 1.2K
TO REMOCON (RECEIVER)
TO CD POWER SW
TO CLOCK MODE SW
TO DOLBY P/B-REC SW
TO POWER SUPPLY
POWER SW MUTE
HEADPHONE JACK
PHONO SW201
AUX SW202
CD SW203
TUNER SW204
TAPE SW205
FROM SUPPLY (BACK UP)
PHONO
PHONO R
TUNER
REC
TAPE_PB
CD IN
+15V
-15V
+35V
-35V

# TUNER


FM FRONT END
FE407-G60
BPF
LA1265
IC101
AN7470
MPX IC102
IC 104
UPD1708-011
L C D
FM VT
1.6V TO 8.0V
MW/1.3V TO 7.9V
LW/1.05V TO 4.18V
VCC 12V
MUTE
FM MODE
RADIO/CLOCK
BACK UP
BATTERY
BACK-UP SUPPLY
TUNER OUT-R
TUNER OUT-L
A TYPE ONLY
S.V.U ONLY
B.E ONLY
* R704 L,R
D TYPE 6.8K
E.U.S.B TYPE 12K
V TYPE 6.8K




REMARK

LC4093

POWER OFF — Q11 BASE: 0V

PIN 2: 4.8V
PIN 3: 0V
PIN 4: 4.8V
PIN 5: 0V

POWER ON — Q11 BASE: 0.7V

PIN 2: 0V
PIN 3: 4.4V
PIN 4: 0V
PIN 5: 4.4V

SA6218

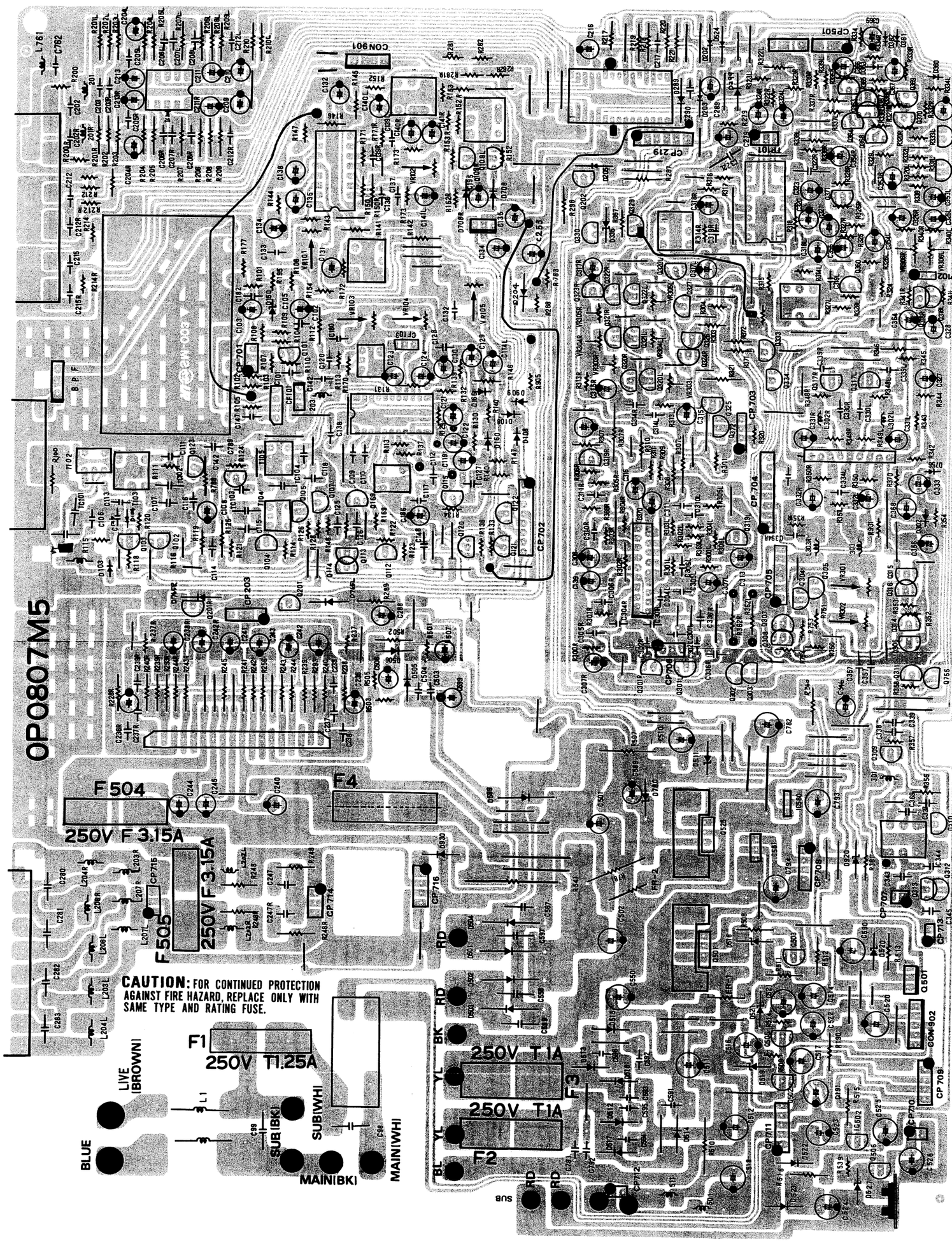
| VOL UP | VOL DOWN |
|---|---|
| PIN 1: 0V | PIN 1: 4V |
| PIN 2: 4V | PIN 2: 0V |
| PIN 7: 0V | PIN 7: 3.3V |
| PIN 9: 3.3V | PIN 9: 0V |

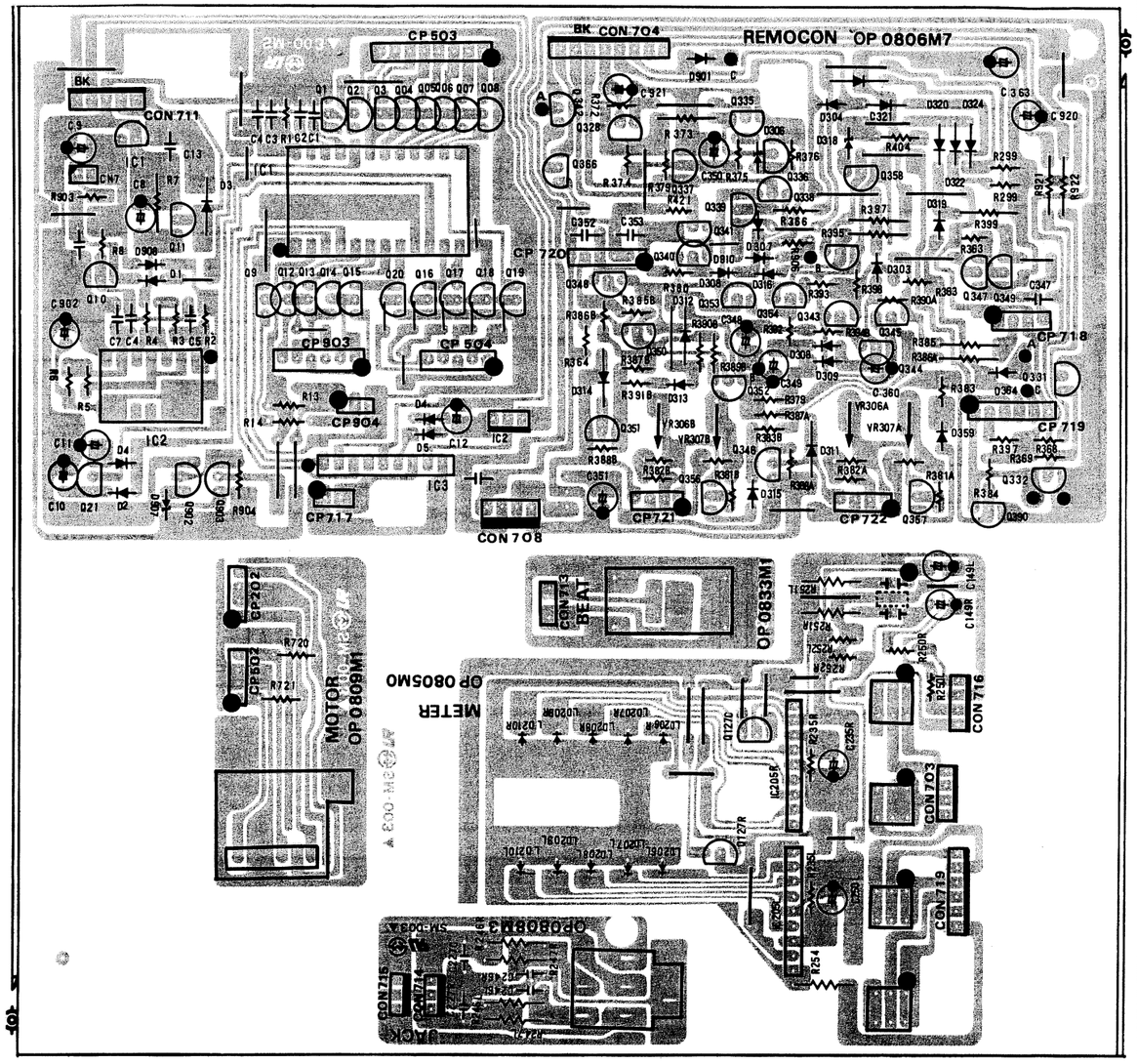
D1: NORMAL: 0V  POWER KEY IN: 4V

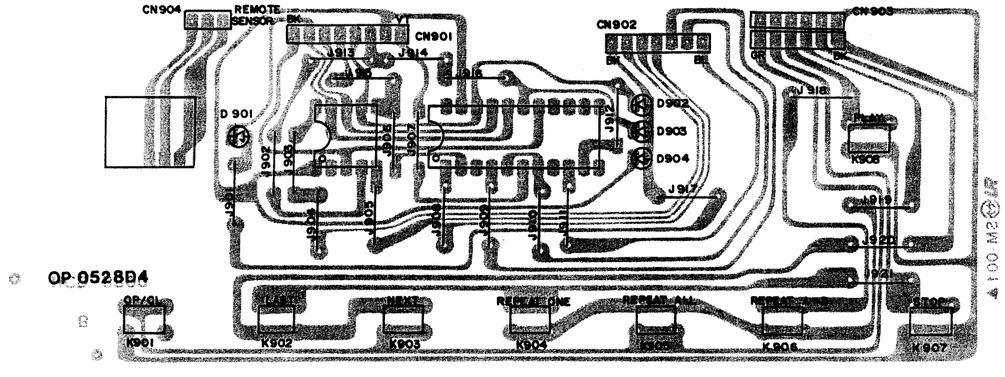
Q10 COLLECTOR: NORMAL 3.6V  POWER KEY IN: 0V

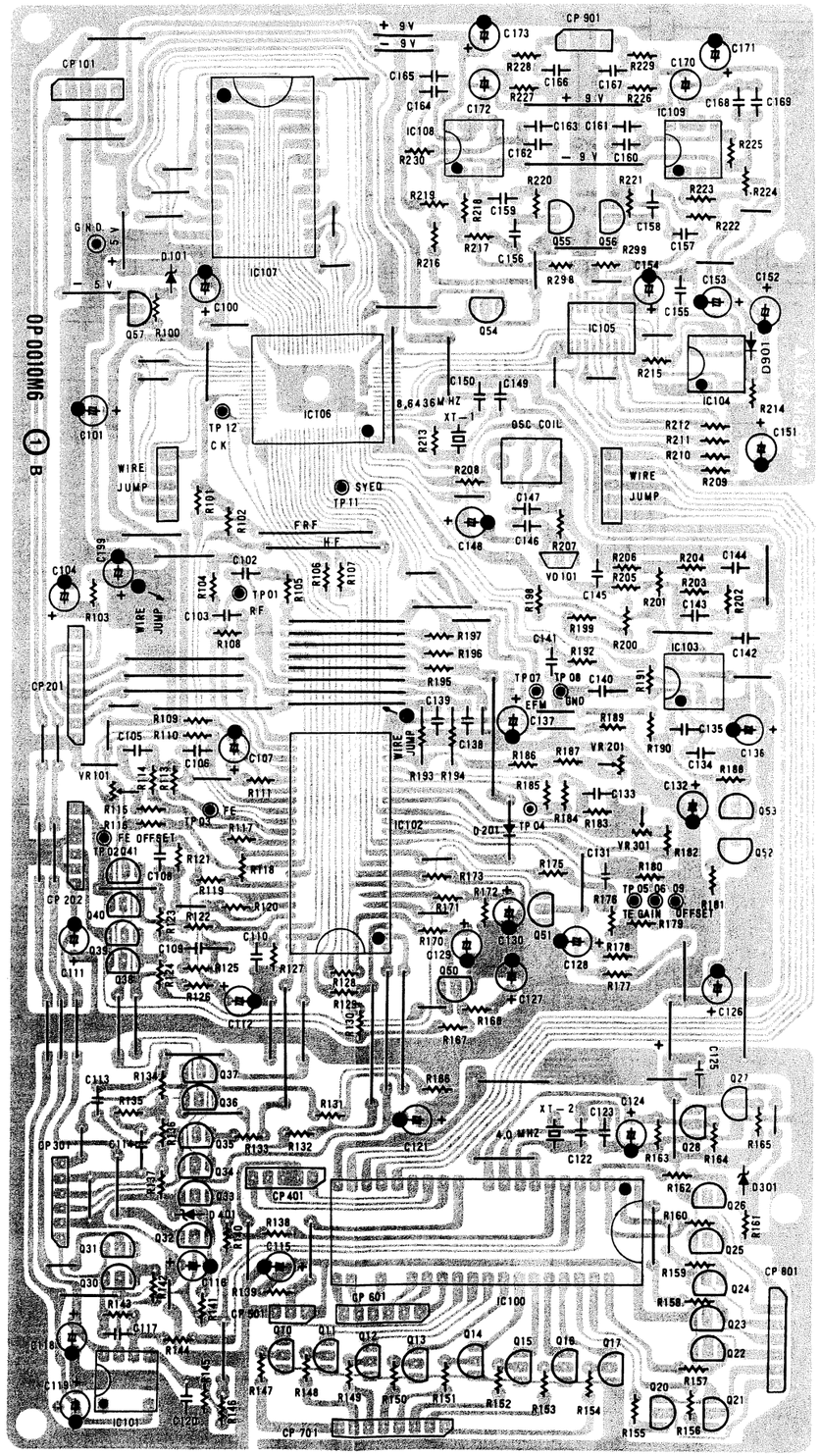
TC9150P

| | | | |
|---|---|---|---|
| PIN 1 | GND | | |
| PIN 2 | RX IN | | |
| PIN 3 | NORMAL | 0V | VOLUME DOWN KEY IN: 4V |
| PIN 4 | NORMAL | 0V | VOLUME UP KEY IN: 4V |
| PIN 5 | NORMAL | 0V | CDP NEXT KEY IN: 2V |
| PIN 6 | NORMAL | 0V | CDP LAST KEY IN: 2V |
| PIN 7 | NORMAL | 0V | CDP STOP KEY IN: 2V |
| PIN 8 | NORMAL | 0V | CDP PLAY KEY IN: 2V |
| PIN 9 | GND | | POWER 1 KEY IN: 4.8V |
| PIN 10 | NORMAL | 0V | |
| PIN 11 | NORMAL | 0V | PHONO KEY IN: 4.8V |
| PIN 12 | NORMAL | 0V | TAPE KEY IN: 4.8V |
| PIN 13 | NORMAL | 0V | AUX KEY IN: 4.8V |
| PIN 14 | NORMAL | 0V | BAND KEY IN: 4.8V |
| PIN 15 | NORMAL | 0V | PRESET "6" KEY IN: 4.8V |
| PIN 16 | NORMAL | 0V | PRESET "5" KEY IN: 4.8V |
| PIN 17 | NORMAL | 0V | PRESET "4" KEY IN: 4.8V |
| PIN 18 | NORMAL | 0V | PRESET "3" KEY IN: 4.8V |
| PIN 19 | NORMAL | 0V | PRESET "2" KEY IN: 4.8V |
| PIN 20 | NORMAL | 0V | PRESET "1" KEY IN: 4.8V |
| PIN 21 | 4.8V | | |
| PIN 22 | 4.8V | | |
| PIN 23 | 3MHZ(OSC) | | |
| PIN 24 | 4.8V | | |


0P0807M5
F 504
250V F 3.15A
F4
F 505
250V F 3.15A
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATING FUSE.
F1
250V T1.25A
F3
250V T1A
F2
250V T1A
LIVE (BROWN)
BLUE
SUB(BK)
SUB(WHI)
MAIN(BK)
MAIN(WHI)
SUB
RD
BK
YL
BL
CON901
CP701
CP702
CP703
CP704
CP705
CP706
CP707
CP708
CP711
CP712
CP713
CP714
CP715
CP716
CP219
CP501
TP101
TP102
COM902
Q501
B P F


REMOCON OP 0806M7
BK CON 704
CP 503
CON 711
CP 720
CP 903
CP 504
CP 904
CP 717
CON 708
CP 721
CP 722
CP 718
CP 719
IC1
IC2
IC3
OP 0833M1
OP 0805MO
METER
CON 716
CON 703
CON 715
CON 713
BEAT
JACK
MOTOR
OP 0809M1
CP 502


OP 0528D4
CN904
REMOTE SENSOR
CN901
CN902
CN905
D 901
D902
D903
D904
K901
K902
K903
K904
K905
K906
K907


OP 0010W6
CP 101
CP 901
IC107
IC106
IC109
IC108
IC105
IC104
IC103
IC102
IC100
OSC COIL
8.4436MHZ
XT-1
4.0 MHZ
XT-2
CP 201
CP 202
CP 301
CP 401
CP 601
CP 701
CP 801
VR101
VR201
VR301
D-201
D101
D901
WIRE JUMP
TP 12 CK
TP11 SYEQ
TP01 RF
TP02 FE
TP03 FE OFFSET
TP04
TP07 EFM
TP08 GND
TP05/06 TE GAIN
TP09 OFFSET
+9V
-9V
+5V
-5V
GND

# BLOCK DIAGRAM (CD)